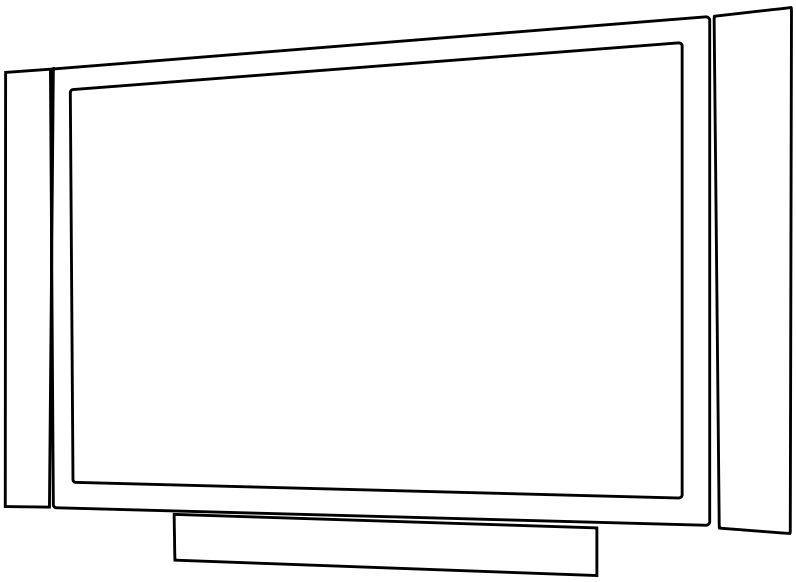
S/M NO. : DSP210PEF0

Service Manual
42" PLASMA PDP TV

CHASSIS : SP-210P

Model : DPP-4242NAS



Caution
: In this Manual, some parts can be changed for improving. their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List)in Service Information Center.

DAEWOO ELECTRONICS

APR. 2005

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II. Parts of MODULE

1. Confirmation Manual
2. Repair Manual

I. Parts with the exception of MODULE

1. Safety Precautions

1. Safety Precautions

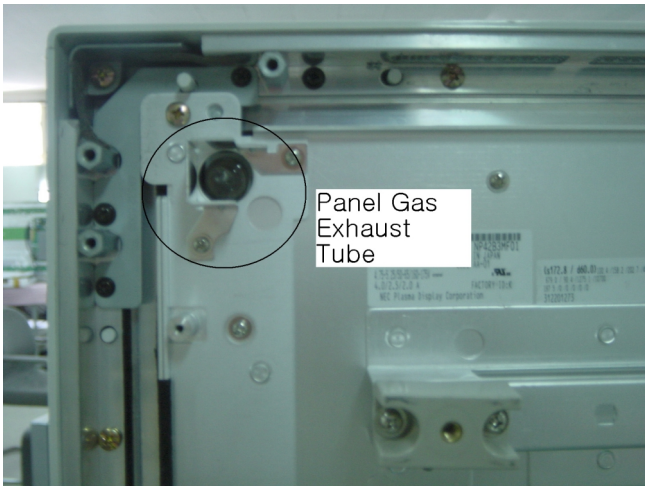
(1) When moving or laying down a PDP Set, at least two people must work together. Avoid any impact towards the PDP Set.

(2) Do not leave a broken PDP Set on for a long time. To prevent any further damages, after checking the condition of the broken Set, make sure to turn the power (AC) off.

(3) When opening the BACK COVER, you must turn off power (AC) to prevent any electric shock. When PDP is operating, high voltage and high current inside the Set can cause electric shocks.

(4) When loosening screws, check the position and type of the screw. Sort out the screws and store them separately for reassembling. Because screws holding PCBs are working as electric circuit GROUNDING, make sure to check if any screw is missing when assembling/reassembling. Do not leave any screws inside the set.

(5) If you open the BACK COVER, you will see a Panel Gas Exhaust Tube (Picture. 1-1) inside the bracket. If this part is damaged, the entire PDP PANEL must be replaced. Therefore, when working with the set, be careful not to damage this part.



Picture 1-1. Panel Gas Exhaust Tube

(6) A PDP Set contains different kinds of connector cables. When connecting or disconnecting cables, check the direction and position of the cable beforehand.

(7) Connect/disconnect the connectors slowly with care especially FFC (film) cables and FPC cables. Do not connect or disconnect connectors instantaneously with force, and handle them carefully for reassembling.

(8) Connectors are designed so that if the number of pins or the direction does not match, connectors will not fit. When having problem in plugging the connectors, check their kind, position, and direction.

2. Product Specification

2-1. SPECIFICATION

ITEM	SPECIFICATION	REMARK
1. GENERAL		
1-1. MODEL NO	DPP-4242NHS	
1-2. CHASSIS NO	SP-210P	
1-3. SCREEN SIZE	42" (16:9)	
1-4. COUNTRY	Europe	
1-5. RESOLUTION	853(H) x 480(V)	
1-6. REMOCON TYPE	R-53G12	
1-7. SAFETY STANDARD	CE(CLASS B), CB	
1-8 .TUNIG METHOD	FS	
1-9. MEMORY CHANNEL	99CH	
2. MECHANICAL		
2-1. APPEARANCE		
1) WITHOUT STAND	W x H x D =1044 x 631 x 89 mm	
2) WITH STAND	W x H x D =1044 x 705.9 x 310 mm	
2-2. WEIGHT		
1) WITHOUT STAND	30.2 Kg	
2) WITH STAND	60 Kg	
3. ELECTRICAL		
3-1. VIDEO INPUT	COMPOSITE(NTSC, PAL, SECAM, PAL-M/N, NTSC4.43) & S-VHS(50/60Hz Y/C) 1 set	
3-2. DTV/DVD INPUT	1080 i, 720P, 480P , 480i, 576P, 576i (Y, Pb/Cb, Pr/Cr COMPONENT SIGNAL) 2sets	
3-3. SCART INPUT	SCART(COMPOSITE, R,G,B, SOUND) R/L 2sets	
3-4. PC INPUT	VGA ~ SXGA(Dot clock : 120MHz), 15 PIN D-SUB 1set	
3-5. DVI INPUT	DVI-D INPUT (DVI Jack) 1set	
3-6. TV INPUT		
1) COLOR STANDARD	PAL B/G+I/I+D/K, L-SECAM, L'--SECAM	
2) ANTENNA IN	ONE INPUT 75Ω Unbalanced (DIN Standard)	
3) RECEPTION CHANNEL	VHF LOW : E2 ~ S6 Ch. VHF HIGH : S7 ~ S36 Ch. UHF : S37 ~ E69 Ch. L'-SECOM : FB, FC1, FC	
4) IF & SUBCARRIER	PIF : 38.90MHz (PAL B/G+I/I+D/K, L-SECAM 33.9 MHz (L'-SECAM) SIF : 33.40MHz (B/G), 32.90MHz (I/I), 32.4MHz (D/K, L-SECAM), 40.4MHz (L'--SECAM)	
3-7. SOUND INPUT	VIDEO 1set, DTV/DVD 2set, PC 1set, DVI 1set	
3-8. SPEAKER OUTPUT	10W(R) + 10W(L)	
3-9. POWER REQUIREMENT	AC 100V~240V, 50/60Hz	
ITEM	SPECIFICATION	REMARK
3-10. POWER CONSUMPTION	260W(Typical)	
3-11. RS-232 CONTROL	RS-232 Communication (FOR SERVICE UPGRADE)	
3-12. AV OUTPUT	SCART(CVBS, SOUND R/L) 2 sets	
3-11. AV OUTPUT	CVBS 1 set, SOUND R/L 1 set	

3-13. FUNCTION		
1) SCALING	DVI : H/V SIZE PC: H/V SIZE, POSITION, PHASE, FREQUENCY VIDEO/DVD(480i/576i) : 16:9, 4:3, AUTO, EnlargeLB, EnlargeLBS, PANORAMA DTV/DVD(480P and Better Reolusion) : 16:9, 4:3	
2) ZOOM	20 STEP ZOOM and PANING	
3) OSD Language	18 Languages (English, Greek, Dutch, German, Russian, Rumanian, Swedish, Danish, Finnish, Norwegian, Spanish, Italian, French, Polish, Portuguese, Czech, Hungarian , Slovakian)	
4) OTHERS	STILL, SLEEP MODE, SOUND MODE, PICTURE MODE TIMER, TELETEXT (LEVEL 2.5)	
5) PIP/POP	Make reference to PIP SPECIFICATION (2Tuner PIP, Possible PIP inputs) Shown in the next page.	
6) SOUND	BBE Technology	
4. OPTICAL		
4-1. SCREEN SIZE	42”(106 cm) DIAGONAL	
4-2. ASPECT RATIO	16 : 9	
4-3. NUMBER OF PIXELS	853(H)X480(V)	
4-4. DISPLAY COLOR	1,677 Million Colors (8bits for each RGB)	
4-5. CELL PITCH	1.08(H) x 1.08(V)mm (1 Pixel = a Set of RGB Cells)	
4-6. PEAK LUMINANCE	400cd/m^2(WITH FILTER GLASS)	
4-7. CONTRAST RATIO	1500:1 (Dark Room)	
4-8. VIEWING ANGLE	160 degree(VERTICAL/HORIZONTAL)	
5. USERCONTROL & ACCESSORIES		
5-1 CONTROL BUTTON(SET)	PUSH-PULL S/W : AC POWER BUTTON SOFT S/W: MOVE/CH(UP, DOWN), VOLUME(LEFT, RIGHT), MENU, INPUT SELECT	
5-2. REMOTE CONTROL (R-53G12)	Power, Universal Selection (TV, VIDEO/DVD, CABLE, SAT), 10 KEYS(0~10), Recall, VCR /DVD KEY (RR, Play, FR, Stop, Freeze, OPEN/CLOSE, PREV, NEXT), Menu, TV/VIDEO, MULTIMEDIA, Still, Previous Channel, Sound Off, Channel(UP/DOWN), Volume(UP/DOWN), Screen Mode/MIX, Screen Size, Zoom-, Zoom+, Sleep Timer, Multilingual/CYAN, Sound Mode/INDEX,. RED, GREEN, YELLOW, TEXT, REVEAL, UPDATE, EXPAND, SUBPAGE, HOLD, PIP, SWAP, PR+, PR-, POSITION, SOURCE	
5-3. ACCESSORIES	REMOCON, BATTERY, USERS MANUAL, POWER CORD, FILTER EMI	
5-4. OPTIONAL PARTS	STAND, WALL HANGER, SPEAKER UNITS(Left, Right)	

2-2. Available Input Signal

(1) PC & DVI

Resolution	H Freq. (KHz)	V Freq. (Hz)	Remark	DVI	PC
640x400	37.861	85.080	VESA		O
640x480	31.469	59.940	DOS	O	O
	37.861	72.809	VESA	O	O
	37.500	75.000	VESA	O	O
	43.269	85.061	VESA	O	O
720x400	31.469	70.087	IBM	O	O
	37.927	85.039	VESA		O
800x600	35.156	56.250	VESA	O	O
	37.879	60.317	VESA	O	O
	48.077	72.188	VESA	O	O
	46.875	75.000	VESA	O	O
	53.674	85.061	VESA	O	O
1024x768	48.363	60.004	VESA	O	O
	56.476	70.069	HP&VESA	O	O
	60.023	75.029	VESA	O	O
	68.677	84.997	VESA		O
1152x864	67.500	75.000	VESA	O	O
1280x960	60.000	60.000	VESA	O	O

(2) DTV
-1080i/ 60 Hz
-720P / 60 Hz
-480P / 60 Hz

(3) VIDEO
-PAL, PAL-M, PAL-N
-NTSC , NTSC4.43
- SECAM

2-3. Remote Control Setup Code

[BRAND LIST : R-53DP4]

1. VCR/DVD **LAST UPDATE : 2004.05.19**

1) VCR (STANDARD : 002)

Maker (Brand) Name	Code Number (3 digit) List
AIWA	038 043 054 072 111 115 120
AKAI	027 034 043 069 089 091 102 123
AKURA	028 111
ALBA	028 060 072 113 118 119 120
AMSTRAD	038
ANITSCH	029
ARC EN CIEL	043 044 089
ARISTONA	048 090 108
ASA	053 054
BAIRD	043 102
BASIC LINE	028 060 072
BLAUPUNKT	026 085 090 097 106 108
BRANDT ELECTRONIQUE	043 044 089
BUSH	027 028 060 072 118 119 120
CAPEHART	060
CGE	038 043 089
CONTINENTAL EDISON	043 044 089
CRAIG	001 041
CURTISMATHES	059 061
DAEWOO	002 008 060 062 063 067 068
DAYTRON	060
DECCA	038 043
DEGRAAF	014 017 038 048 053
DUAL	043 089
DUMONT	014 038 053
DYNATECH	038
ELBE	035
EMERSON	010 031 038 059 061 072
FERGUSON	004 043 082 084 089 093 099 103 107 121 126
FIDELITY	038
FINLADIA	014 053
FINLUX	014 017 038 053
FISHER	001 014 018 033
FUNAI	038

Maker (Brand) Name	Code Number (3 digit) List
GBC	092
GE	059 061
GELOSO	092
GOLDSTAR	054
GOODMANS	028 038 041 049 053 054 060 072
GRAETZ	043 044 083 089 105
GRANADA	014 018 053 108 124
GRUNDIG	053 085 090 096 097 098 108
HIFIVOX	043 044 089
HINARI	010 028 071 072 077 092 111 116 120
HITACHI	017 024 038 043 073 086
IMPERIAL	038 095
INGELEN	043 044 089 105
INGERSOL	077
INNO HIT	092
ITT	018 043 083 102
ITT-NOKIA	043 044 089 105
JENSEN	043
JVC	003 006 009 043 044 046 084 089 111 114 124
KENWOOD	018 043 046 111
KRIESLER	048 090 108
LLOYD	038
LOEWE	064
LOEWE OPTA	053 081 090 108
LOGIK	028 041 072 077 102
LUXOR	102 105
LXI	054
MAGNASONIC	105
MAGNAVOX	059 061
MARANTZ	049 053 072 090 108 110
MATSUI	010 031 041 054 072 077 113 117 120
MEMOREX	001 014 018 038 048 054
METZ	090 097 104 108
MGA	052
MINERVA	085 097 108
MINOLTA	017 024

Maker (Brand) Name	Code Number (3 digit) List
MITSUBISHI	046 052 075 122
MTC	038 041
MULTITECH	020 028 038
MURPHY	038
NAONIS	043 044 089
NATIONAL	106
NEC	035 043 046 089
NECKERMANN	010 043 089 108
NOBLIKO	108
NOGAMATIC	043 044 089
NOKIA	014 018 043 044 083 089 102 105
NORDMENDE	003 006 009 013 015 019 021 022 036 043 044 089 094 096 100 101
OPTONICA	048 049
ORION	010 030 031 032 058 072 077
OSAKI	038 054
PANASONIC	016 070 087 088 106
PATHE' MARCONI	043 044 089
PENTAX	017 024
PERDIO	038
PHILIPS	005 040 042 045 048 049 053 064 078 081 090 108
PHONOLA	048 053 081 090 108
PIONEER	046 053 112
PORTLAND	060
PROLINE	038
PYE	048 053 081 090 108
QUARTZ	018
QUELLE	010 047 097 108
RADIOLA	048 090 108
RCA	059 061
REALISTIC	001 014 018 038 041 048 049
REX	003 043 044 089
ROADSTAR	028 041 054
SABA	003 006 011 012 013 015 021 022 043 044 089 101
SAISHO	010 031 072 077 086 113
SALORA	018 052 124

Maker (Brand) Name	Code Number (3 digit) List
SAMSUNG	041 055 056 059 061 065 066 091 095
SANSUI	043 046
SANYO	001 014 018 039 072 105 125
SBR	053 078 081
SCHAUB LORENZ	043 044 083 089 105
SCHNEIDER	028 038 048 090 095 108
SEG	095
SEI-SINUDYNE	077
SELECO	043 044 089
SENTRA	060
SHARP	048 049 057 074
SHINTOM	028
SIEMENS	085 090 097 105 108
SIERA	048 090 108
SINUDYNE	077
SONY	047 050 051 076 080
STERN	043 044 089
STS	017
SUNKAI	072
SYLVANIA	038 052
SYMPHONIC	038 052
TASHIKO	038
TATUNG	038 043
TEAC	038 043
TEKNIKA	038
TELEAVIA	043 044 089
TELEFUNKEN	006 015 023 025 037 043 044 089
TENOSAL	028
THOMSON	015 019 043 044 089
THORN	043 084 089 109
THORN-FERGUSON	021 022 043 082 084 089 093 099 103 107
TOSHIBA	008 043 044 052 079 089
TOTEVISION	041
UHER	043 095
UNITECH	041
VICTOR	043 046

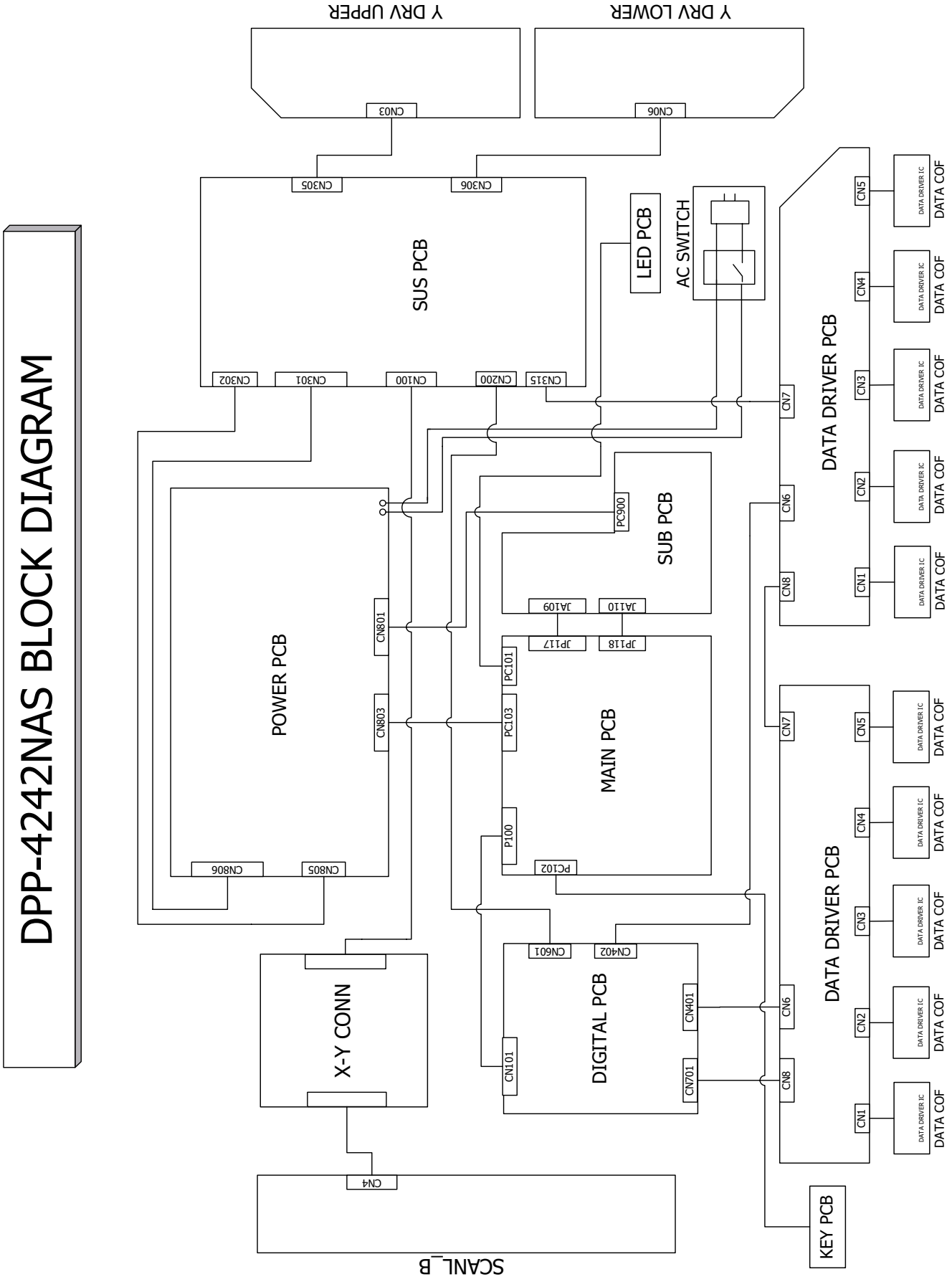
Maker (Brand) Name	Code Number (3 digit) List
WARDS	059 061
YAMAHA	043
ZANUSSI	043 044 089
ZENDER	089
ZOPPAS	043 044
2) DVD	
Maker (Brand) Name	Code Number (3 digit) List
ANAM	158 159
AKAI	154
DAEWOO	152 160
DENON	157 161
HYUNPAZ	162
KENWOOD	156
LG	150 168 169
MAGNAVOX	155
ONKYO	165 166 167
PANASONIC	157 170
PHILIPS	155
PIONCER	153
SAMSUNG	151 163 164
THOMSON	171
TOSHIBA	155
YAMAHA	157
WILL CAN	172

2. SAT (STANDARD : 002)	
Maker (Brand) Name	Code Number (3 digit) List
AKAI	032
ALBA	016 023 055 069 111 115 117 120
AMSTRAD	070 096
ANKARO	050
ARCON	078
ARISTONA	052
ARTHUR MARTIN	094
ASTRA	067 097
BARCOM	050
BLAUPUNKT	037
BT SATELLITE	119
BUSH	023 047 052 055 069 076 106
CAMBRIDGE	059
CAMBRIDGE ARD200	103
CHAPARRAL	011
CONNEXIONS	038 041 095
DAEWOO	002
DISKXPRESS	038 050
DRAKE	001 039 043 060 077
ECHOSTAR	015 020 046 049 064 065 071 085
ELTASAT	058
FERGUSON	044 047 051 052 062 063 066 076 106 108 111
FINLUX	008 009
FRACARRO	054 086
FTE	079
FUBA	013
GIUCAR RECORD	006 088
GOLDSTAR	078 107
GOODMANS	111
GRAETZ	087 098
GRANADA	098
GRUNDIG	037 052 066 089 122
HIGH PERFORMANCE	084
HIRSCHMANN	008 037
HITACHI	106 111
INGELEN	087 098
ITT	068
ITT-NOKIA	020 066 087 098

Maker (Brand) Name	Code Number (3 digit) List
JEEMON	058
JERROLD	044
JOHANSSON	093
KATHREIN	032 079 080 089 090 095 099 110 112 114 118 120
KRIESLER	052
LENCO	078
LUXOR	042 087 094 098
MACAB	083
MAGAI	079
MANHATTAN	058 106 111 116
MARANTZ	032
MASPRO	048 052 092 095 106 108 113 121
MATSUI	019 109 119
METZ	089
MINERVA	089
MULTISTAR	079
NEC	029 035 072
NEIRU	078
NOKIA	087 098 105
NORSAT	045
PACE	010 052 063 066
PACE MSS SERIES	066
PALCOM	091
PALSAT	024
PANASONIC	030
PHILIPS	018 031 032
PHONOLA	052
PROSAT	055
PYE	052
QUELLE	089
RADIOLA	052
RADIX	046
RC-1000	103 104
REDIFFUSION	035 045
SAKURA	053 056
SALORA	033 067 087 094 098
SAMSUNG	079
SATECO	016
SATPORTNER	078
SCHAUB LORENZ	087 098

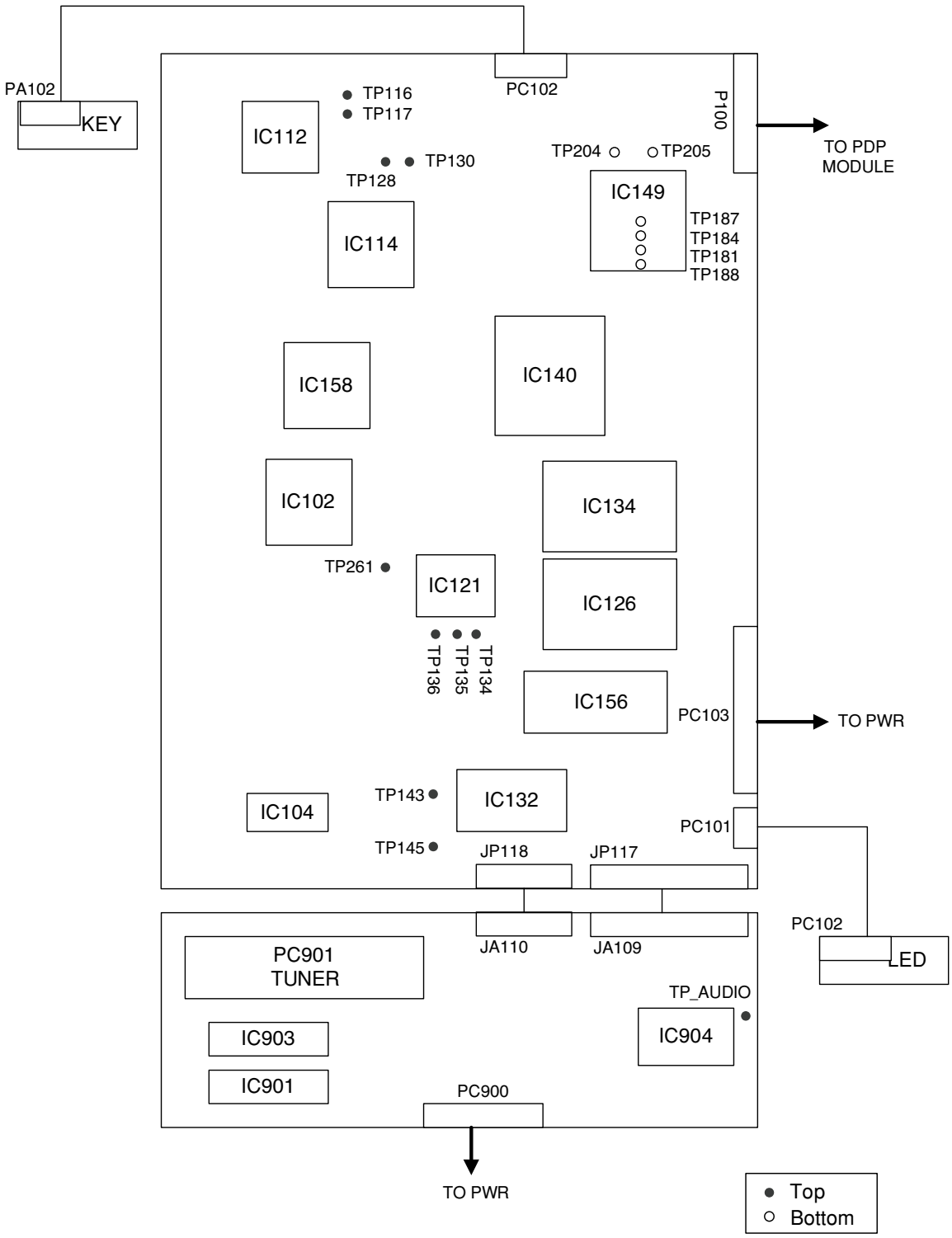
Maker (Brand) Name	Code Number (3 digit) List
SCHNEIDER	052
SENTRA	036
SIEMENS	037 089
SIERA	052
SILVA	078
SINTRACK	012
STARSAT	079
STELLA	040
STRONG	024 061
STV	013
TANDBERG	007
TANDY	084
TATUNG	034 073
TECHNISAT	004 005 027 083 101 102
TELECOM	040 123 124
TELEFUNKEN	082
TELEMAX	017
THORN-FERGUSON	022 044 047 051 052 062 063 066
TRIACL	083
TRIAD	084 100
UNIDEN	057 074 075 079
VIDIO WAY	014
VORTEC	081 082
WINERSAT	093
WISI	003 021 025 026 046
WOLSEY	084
ZEHNDER	079
ZENITH	043
3. CATV (STANDARD : 002)	
Maker (Brand) Name	Code Number (3 digit) List
CABLETIME	201 206 207
FILMNET CABLECRYPT	202
JERROLD	203 204
MATSUSHITA	202
SCIENTIFIC ATLANTA	205
SKYLIFE	002
STARCOM	203
UNITED CABLE	203
VISIOPASS	209
WESTMINSTER CABLE	208

3. BLOCK DIAGRAM



4. Description of A/V(MAIN and SUB PCB) and POWER

4-1. Block Diagram of main IC and TP



Description of A/V(MAIN and SUB PCB) and POWER

4-2. Overview

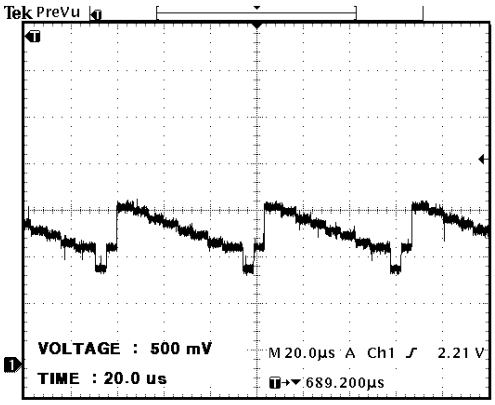
A/V block (Main and Sub PCB) is Multi Media circuit board that can process various input signals such as video, component, PC, DVI, and analog TV signal. It is mainly composed of switching, sync processing, decoding, analog TV, digital image processing, and system control part

4-2-1. Composite video, Y/C(S-Video) and SCART (CVBS, RGB) composite video

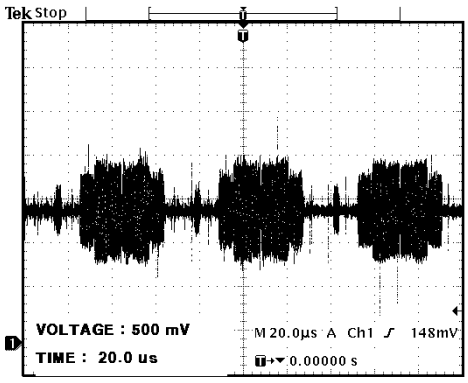
Y/C(S-Video) and SCART(CVBS) have similar signal paths. For the Main signal, IC102 receives these inputted signals and swiches out a selected signal. Then the signal goes into IC132 for video processing, SCART(RGB) signal goes directly into IC132. The output of IC132 goes through IC134 and IC140 for deinterlacing and digital image processing respectively.
However, at PIP mode, sub signal has a little bit different path from the Main signal. First of all, IC102 receives input signals such as composite video, Y/C or etc, and swiches out the selected signal like as the Main signal. But the selected signal goes into IC158 for video processing instead of going into IC132. Then it goes into IC140 for image processing.

- Main
  - A. IC102: Switching IC (Input: analog inputs Output: an analog output)
  - B. IC126: Teletext IC
  - C. IC132: Video processor (Input: Y/C, CVBS Output: 16bit digital, HV)
  - D. IC134: Deinterlacer (Input: 16bit digital, HV Output: 24bit digital RGB, HV)
  - E. IC140: Image Processor (Input: 24bit digital RGB, HV Output: 24bit digital RGB, HV)
- Main TP (Input: Color Bar Pattern)
- Sub
  - A. IC102: Switching IC (Input: analog inputs, Output: an analog output)
  - B. IC158: Video Processor (Input: Y/C, CVBS, Output: 24bit digital RGB, HV)
  - C. IC140: Image Processor (Input: 24bit digital RGB, HV, Output: 24bit digital RGB, HV)

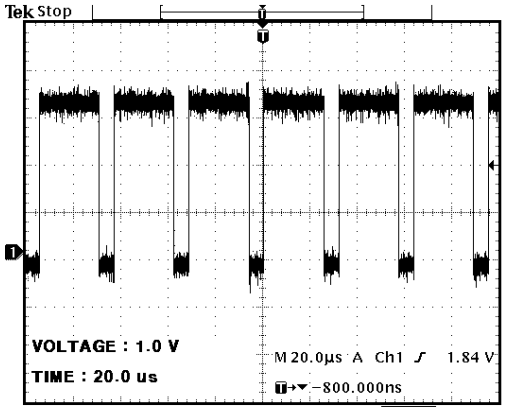
◆TP145: Brightness signal (input to IC132)



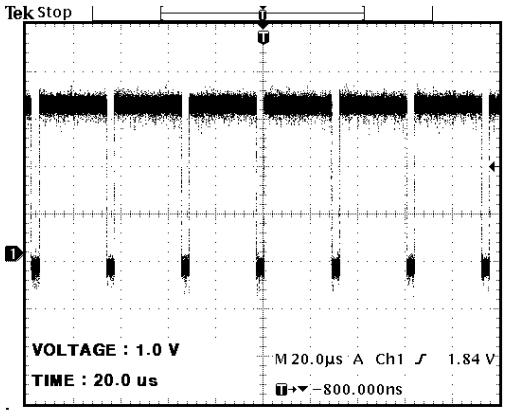
◆TP143: Color signal (input to IC132)



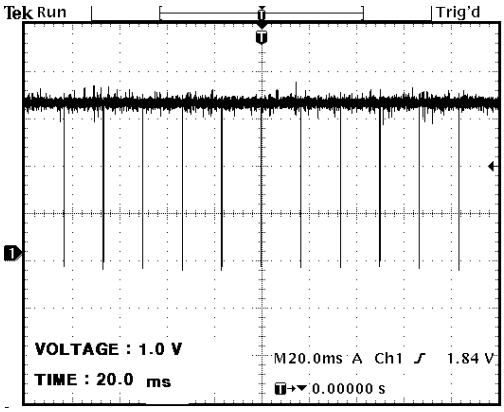
◆TP181: Data enable (output of IC140)



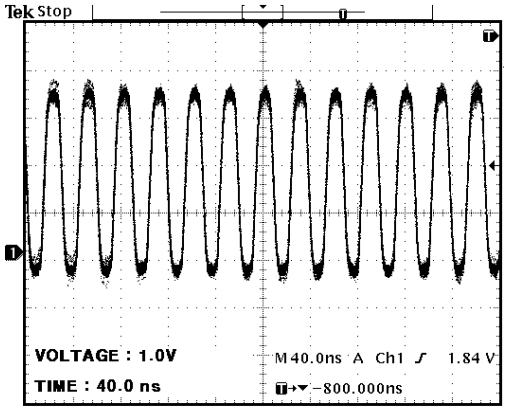
◆TP184: Horizontal sync (output of IC140)



◆TP187: Vertical sync (output of IC140)



◆TP188: Clock for display (output of IC140)



4-2-2. TV signal

Tuner(PC901) receives antenna signal and outputs CVBS and sound signal. For the Main signal, IC102 switches out the CVBS and the rest of the signal flow is same as composite video signal flow mentioned earlier.
Also, Sub TV signal at PIP mode flows similar path to the Sub composite video signal pass except that IC102 swiches out the CVBS signal.

- Main
  A. PC901: Tuner (Input: antenna signal Output: CVBS)
  B. IC102: Switching IC (Input: CVBS Output: CVBS)
  C. IC126: Teletext IC
  D. IC132: Video processor (Input: Y/C Output: 16bit digital, HV)
  E. IC134: Deinterlacer (Input: 16bit digital, HV Output: 24bit digital RGB, HV)
  F. IC140: Image Processor (Input: 24bit digital RGB, HV Output: 24bit digital RGB, HV)

- Sub
  A. PC902: Tuner (Input: antenna signal, Output: CVBS)
  B. IC102: Switching IC (Input: CVBS, Output: CVBS)
  C. IC158: Video Processor (Input: Y/C, Output: 16bit digital, HV)
  D. IC140: Image Processor (Input: 24bit digital RGB, HV, Output: 24bit digital RGB, HV)

- Main TP (Input: Color Bar Pattern)
  ◆TP143, 145
  ◆TP181, 184, 187, 188

4-2-3. DTV/DVD signal

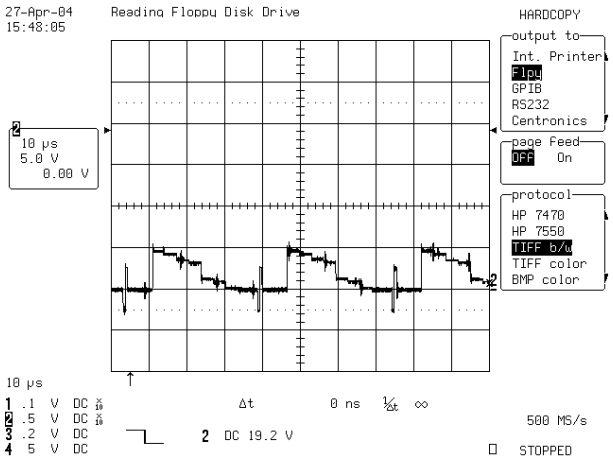
Both DTV(Y, Pb, Pr) and DVD(Y, Cb, Cr) share same jack and signal path. For the Main, IC102 switches out signal and also detects type of signal so that IC121 can convert the analog signal to digital. Then the signal goes through IC134(deinterlacer) and IC140 for digital image processing. On the other hand, Sub DTV/DVD signal is swithed out in IC102 and goes into IC114 for A/D conversion, Then it goes into IC140 for the image processing.

- Main
  A. IC102: Switching IC (Input: Component Output: Component, HV)
  B. IC121: A/D converter (Input: Component, HV Output: 24bit digital RGB, HV)
  C. IC134: Deinterlacer (Input: 24bit digital RGB, HV Output: 24bit digital RGB, HV)
  D. IC140: Image Processor (Input: 24bit digital RGB, HV Output: 24bit digital RGB, HV)

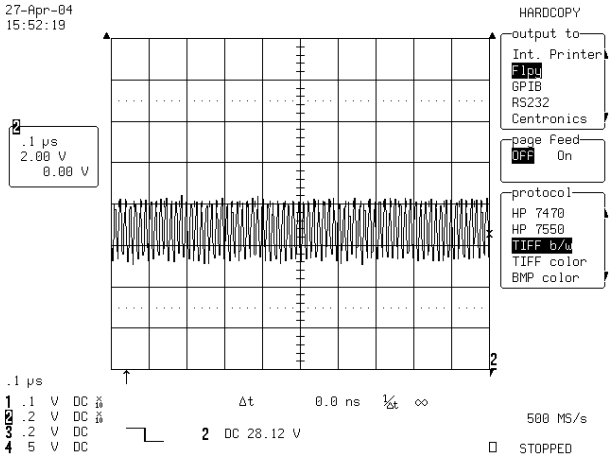
- Sub
  A. IC102: Switching IC (Input: Component, Output: Component, HV)
  B. IC114: A/D converter (Input: Component, HV, Output: 24bit digital RGB, HV)
  C. IC140: Image Processor (Input: 24bit digital RGB, HV, Output: 24bit digital RGB, HV)

- Main TP (Input: 480P, Color Bar Pattern)

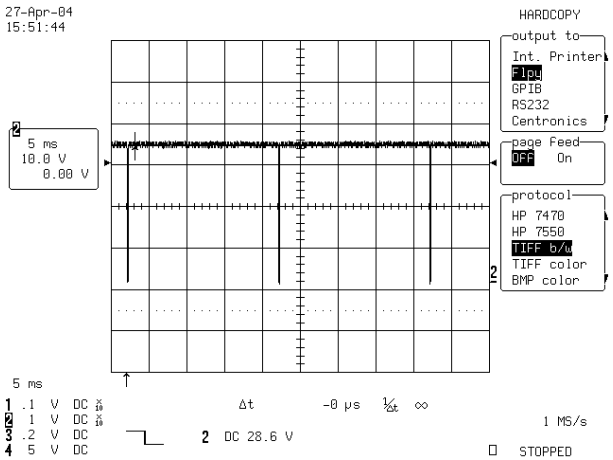
◆ TP261: Y signal (Input to IC121)



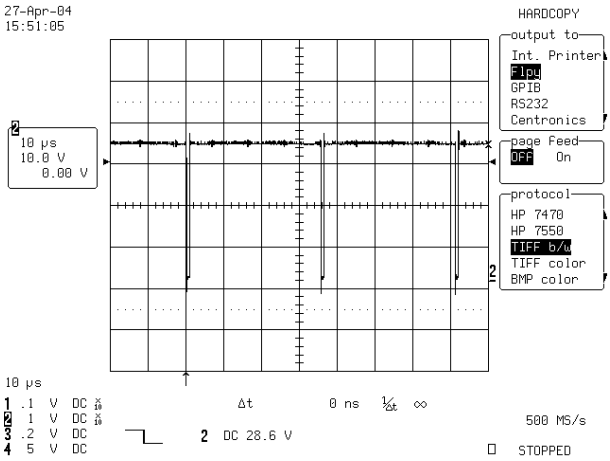
◆ TP134: Clock (output to IC121)



◆ TP135: Horizontal sync (output of IC121)



◆ TP136: Vertical sync (output of IC121)



4-2-4. PC (Personal Computer)signal

PC signal is switched out by IC109 and input to IC114 for A/D conversion. Then the signal goes through IC140 for digital image processing.

- Main IC

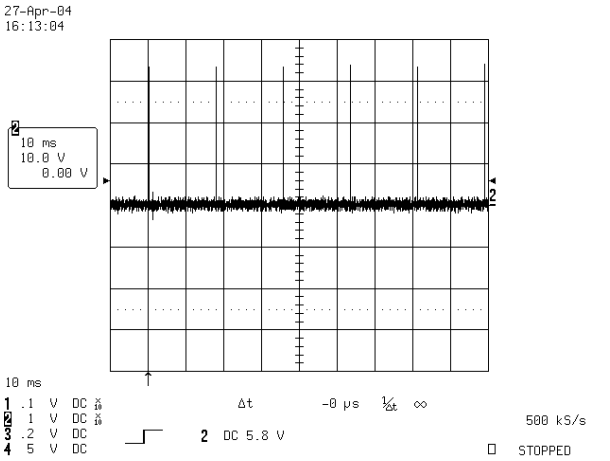
A. IC109: Switching IC (Input: Analog RGB, H, V Output: Analog RGB, H, V)

B. IC114: A/D converter (Input: Analog RGB, H, V Output: 24bit digital RGB, H, V)

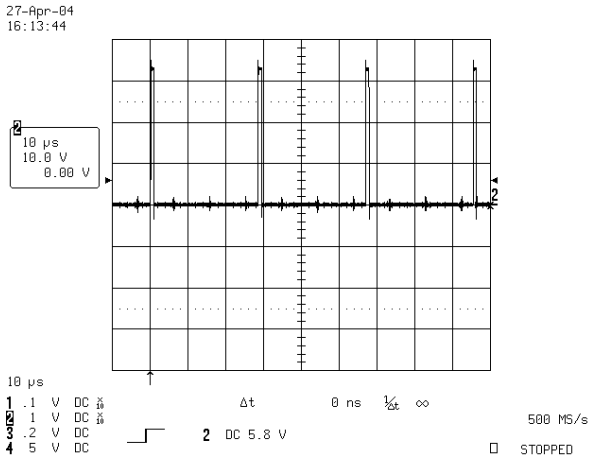
C. IC140: Image Processor (Input: 24bit digital RGB, H, V Output: 24bit digital RGB, H, V)

- Main TP (Input: Color Bar Pattern)

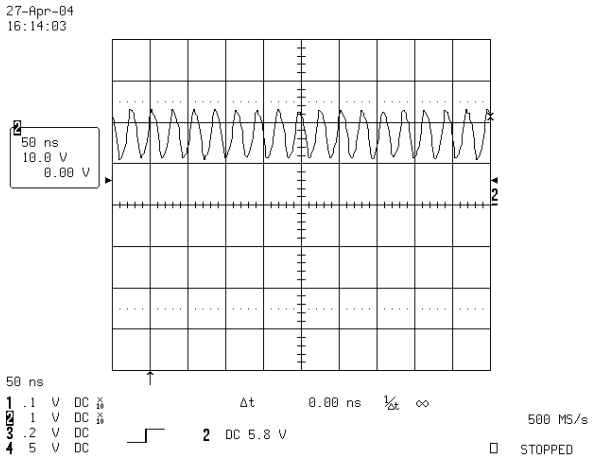
◆ TP130: Vertical sync (output of IC114)



◆ TP128: SYNC for PLL (output of IC114)



◆ TP127: Output clock (output of IC114)



4-2-5. DVI(Digital Visual Interface) signal

To process DVI signal, graphic card of AV device reads EDID data from IC101(ROM). Then DVI signal is directly inputted to IC112, which outputs digital 24bit RGB and H, V. The output goes through IC140 for digital image processing.

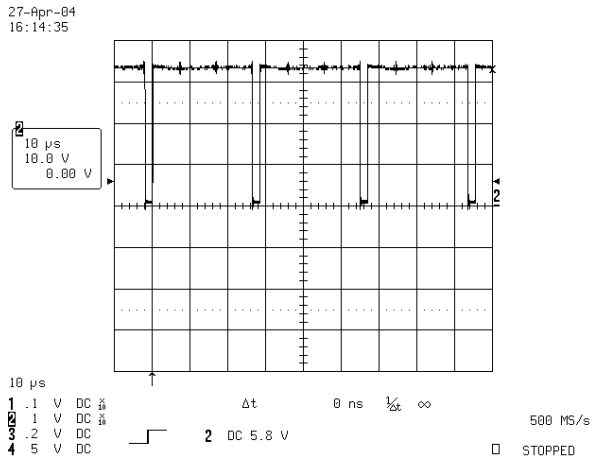
- Main IC

A. IC101: ROM containing EDID data (EDID: display capabilities such as resolution, aspect ratio etc.)

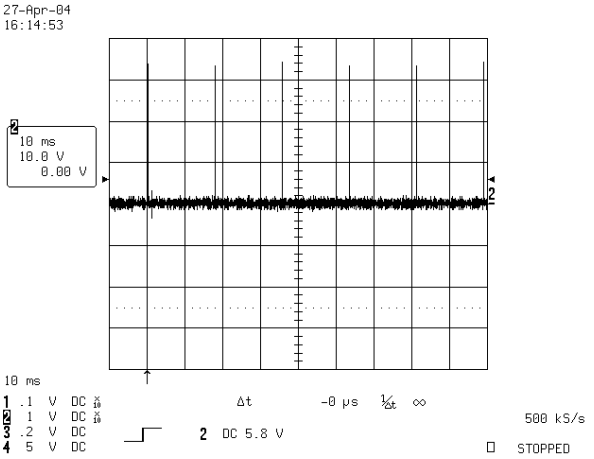
B. IC112: DVI signal processor (Input: TMDS Output: 24bit digital RGB, H, V)

- Main TP (Input: Color Bar Pattern)

◆ TP116: Horizontal sync (output of IC112)



◆ TP117: Vertical sync (output of IC112)



4-2-6. Video Enhancer and LVDS transmitter (for all inputs)

Outputs of IC140 are inputted to IC149(video signal enhancer) which improves picture quality greatly. Outputs of IC149 are inputted to IC150 which is a LVDS transmitter. The converted LVDS signal is transmitted to the digital board.

- Main IC

A. IC149: Video enhancer (Input: 24bit digital RGB, H, V Output: 24bit digital RGB, H, V)

B. IC150: LVDS transmitter (Input: 24bit digital RGB, H, V Output: LVDS signal)

- Main TP (Input: Color Bar Pattern)

◆ TP204: Horizontal sync (output of IC149), refer to TP184

◆ TP205: Vertical sync (output of IC149), refer to TP187

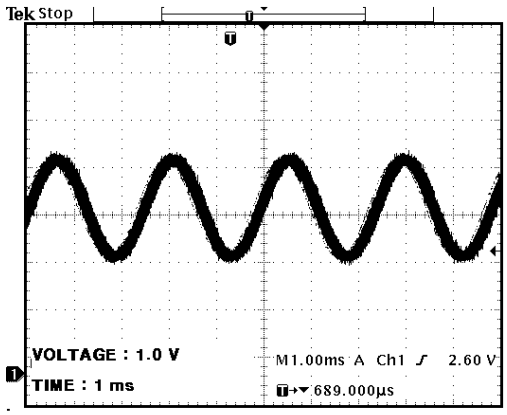
4-2-7. Audio signal processing, KEY, and LED

IC104 switches Audio signals and passes a switched signal to IC904 for audio signal processing. IC904 controls sound parameters such as Volume, Balance, and Equalize. The outputs of IC904 are passed to IC901(left), and IC903(right) respectively to amplify the signals. KEY and LED PCBs send signals received from key buttons and LED to IC140 for command processing.

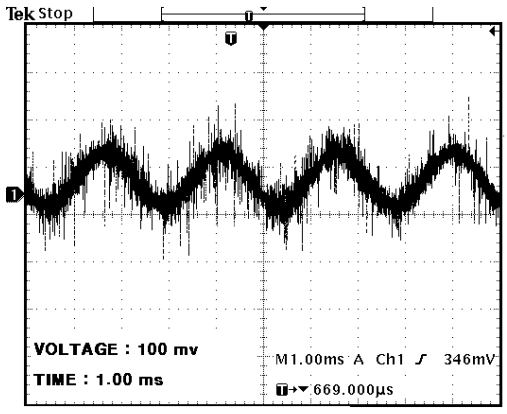
- Main IC
  A. IC104
  B. IC904
  C. IC901, IC903

- Main TP (Input: Sound wave 400Hz)

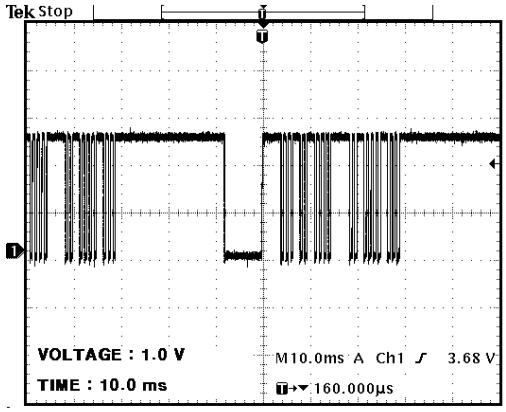
◆ TP_AUDIO: AUDIO SIGNAL that goes into MSP3420 before AUDIO PROCESSING



◆ RIGHT (LEFT) : AMP input signal before 30dB amplification



◆ Remote control signal



4-3. POWER PCB

<Input Source>

◆ Rating: AC100V ~ AC240V (Variable Range- AC85V~ AC276V)

◆ Regulation Method: Transistor & Switching Method

◆ Input Frequency: 50~60Hz (Variable Range- 45Hz ~ 66Hz)

◆ Inrush Current: Below 30A at AC264V

◆ Output Voltage is shown below.

No.	Output	Voltage Rating (V)	Variable Range (V)	Voltage Accuracy (%)*1	Current Rating (A)	Ripple/Noise (mVp-p)*2
1	Vs	175	160-190	±5V *3	0.4~1.5	500/500
2	Va	60	50-65	±2V	0.01~2.5	300/300
3	5Vcntl	5.1	4.75~5.25	±5%	1.2~4	30/200
4	5V	5.1	4.75~5.25	±5%	0.5~4.5	50/200
5	V3 (SOUND)	17	-	±7%	0~0.7	100/400
		-17	-	±7%	0~0.7	100/400
6	33VT	33	-	±7%	1.5	100/400
7	12V	12	-	±5%	0.6	100/400
8	Vstb	5	-	±5%	1.5	50/200

Description of A/V(MAIN and SUB PCB) and POWER

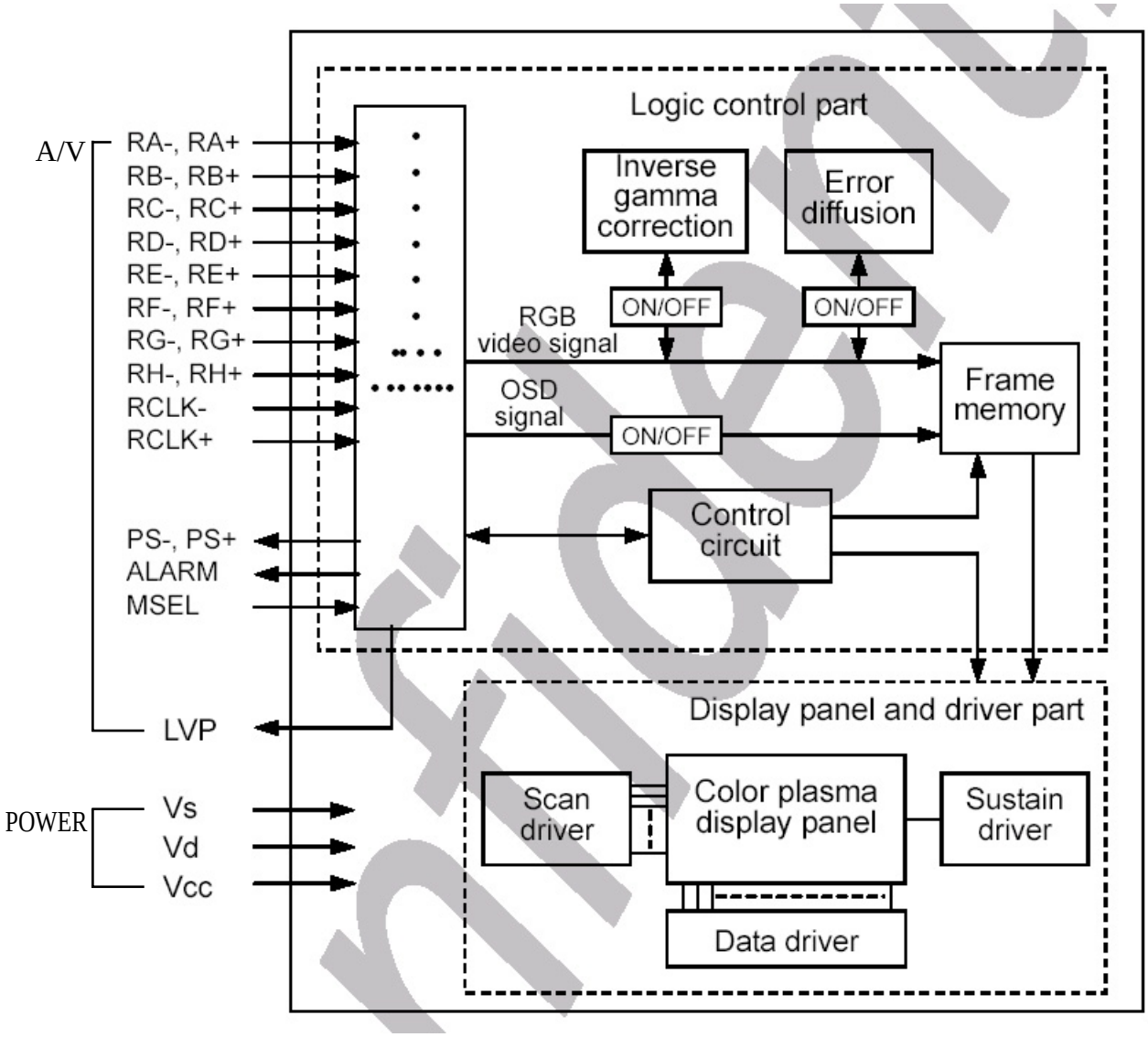
Connector

Connector number		CN806	CN805
Model name		B10P-VH	B4P-VH
Maker		JST	JST
The number of pins		10	4
Pin number	1	ALARM (LVP)	5Vcntl
	2	GND	5Vcntl
	3	GND	GND
	4	GND	GND
	5	GND	
	6	Vd	
	7	Vd	
	8	NC	
	9	Vs	
	10	Vs	

Connector number		CN803	CN804 (NOT USED)	CN801
Model name		YMW025-10R	YMW025-05R	YMW025-04R
Maker		YEONHO	YEONHO	YEONHO
The number of pins		10	5	4
Pin number	1	5V Stand-by	3.3V	33VT
	2	Power	3.3V	GND
	3	GND	GND	+17V
	4	GND	GND	GND
	5	5V	2.5V	-17V
	6	GND	2.5V	
	7	GND	GND	
	8	12V	GND	
	9	12V		
	10	NC		

* CN806 is connected to CN301 of HIGH VOLTAGE PCB.
  CN805 is connected to CN302 of HIGH VOLTAGE PCB.
  CN803 is connected to PC103 of MAIN PCB.
  CN801 is connected to PC900 of SUB PCB.

4-4. Interface with PDP Module



< PDP Module >

5. SERVICE MODE

5.1 Checking initial menu data

(1) Check initial data of User Menu

1) Picture

- Mode : Normal
  - ◆ BRIGHTNESS : 32
  - ◆ CONTRAST : 48
  - ◆ COLOR : 32
  - ◆ Tint : 32 (CENTER) * Not displayed when input signal is PAL or SECAM
  - ◆ Sharpness : 32

- Colour Temp. : Normal

2) Sound

- Balance : 0 (CENTER)
- Effect : Off
- AVC : Off
- Mode : Normal
  - ◆ 120 Hz : 0 (CENTER)
  - ◆ 500 Hz : 0 (CENTER)
  - ◆ 1.5 KHz : 0 (CENTER)
  - ◆ 5 KHz : 0 (CENTER)
  - ◆ 10 KHz : 0 (CENTER)

3) Screen Mode : 16:9

4) Features

- Background : Opaque
- Language : English
- Child Lock : Off
- Enhancer : On
- Auto Power : Off
- Time Setting
  - ◆ Clock : — —:—
  - ◆ Off Timer : Off
  - ◆ Off Time : AM 12:00
  - ◆ Wake Timer : Off
  - ◆ Wake Time : AM 12:00
  - ◆ Wake Pro. : 1
  - ◆ Wake Vol. : 20

- ISM
  - ◆ Pixel Shift : Off
  - ◆ Low Bright : Off

- Initialize

5) Install(TV input only)
- Auto Setup
- Edit
- Manual Setup

5-2 Entering SERVICE MODE

To enter SERVICE MODE
Press "◀VOL" => "MUTE" => "RECALL" => "MUTE" BUTTON of Remote Controller

(1) Check initial data of Service mode

1) PW 181-1

[Note] Initial data of Service Mode can be different depending on Micom(firmware) version. The actual data applied to each set is equal to the data of when executing "Servide Mode->Reset->Level 1"

- Sub Brt : 24
- Sub Cont : 8
- Bias R : 32
- Bias G : 32
- Bias B : 32
- Gain R : 14
- Gain G : 16
- Gain B : 16

2) PW 181-2
- DVI Brt : 16
- DVI Cont : 0
- Sharp Filter : Normal

3) VPC 3230

Main
- Comm Brt : 139
- Comm Cont : 44
- Comm Peak : 3
- CVBS Color : 112
- CVBS Tint : 128
- Comp Brt : 196
- Comp Cont : 22
- Comp Cb : 28
- Comp Cr : 29
- Comp Tint : 32

PIP
- pComm Brt : 139
- pComm Cont : 49
- pComm Peak : 3
- pCVBS Color : 112
- pCVBS Tint : 128

4) 9883_G
- Bias R : 64
- Bias G : 64
- Bias B : 64
- Gain R : 128
- Gain G : 128
- Gain B : 128

5) 9883_V
- Bias Cr : 64

- Bias Y : 60
- Bias Cb : 64
- Gain Cr : 128
- Gain Y : 128
- Gain Cb : 128

6) MDIN 150
- Bright : 128
- Contrast : 64
- Color : 64
- NR : Off

7) Enhncr
- B&W : ON
- FCT : ON
- ACR : ON
- Gamma : ON
- Dither : ON
- SEISAI : ON

8) MSP 34xx
- Sc pScale : 21
- FM pScale : 25
- NC pScale : 51

9) M2
- Contrast :1
- H Posi Full : 30
- Language : 0
- Option : 2
- CIK Full C40 : 0
- CIK Full C56 : 0
- Vposi Full : 132

10) Misc
- Tst Ptrn : AT
- Tst Ptrn : MA
- AT Search ON : ON
- TV AT OFF : ON

11) Info (firmware version information)

12) Reset
- Level 1
- Level 2
- Factory

13) Panel (NEC 42” SD)
- 50Hz Mode : STD1
- 60Hz Mode : STD1
- Frame Conv : Off
- Long Life : Off
- Gamma : On
- ED : On

5-3. Description of SERVICE MODE Items

1) PW181-1 : Image processor control values. Mainly used to adjust White balance.
   [Note] These values need to be adjusted only after replacing MAIN PCB. These values may vary from set to set. Therefore if these values are recorded before replacing MAIN PCB, you do not need to adjust WHITE BALANCE additionally.

   (1) Sub Brt : For BRIGHTNESS adjustment (All inputs)
   (2) Sub Cont : For CONTRAST adjustment (All inputs)
   (3) Bias R : For R BRIGHTNESS adjustment (All inputs)
   (4) Bias G : For G BRIGHTNESS adjustment (All inputs)
   (5) Bias B : For B BRIGHTNESS adjustment (All inputs)
   (6) Gain R : For R CONTRAST adjustment (All inputs)
   (7) Gain G : For G CONTRAST adjustment (All inputs)
   (8) Gain B : For B CONTRAST adjustment (All inputs)

2) PW181-2 : Additional PW181 control values
   [Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values..

   (1) DVI Brt : For BRIGHTNESS adjustment (DVI)
   (2) DVI Cont : For CONTRAST adjustment (DVI)

3) VPC3230 : VIDEO DECODER control values. Used to adjust picture quality of VIDEO/S-VIDEO inputs.
   [Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values.

   Main
   (1) Comm Brt : For BRIGHTNESS adjustment (Video, S-video, Caption)
   (2) Comm Cont : For CONTRAST adjustment (Video, S-video, Caption)
   (3) Comm Peak : For SHARPNESS adjustment (Video, S-video, Caption)
   (4) CVBS Color : For COLOR adjustment (Video, S-video)
   (5) CVBS Tint : For TINT adjustment (Video, S-video)
   (6) Comp Brt : For BRIGHTNESS adjustment (Caption only)
   (7) Comp Cont : For CONTRAST adjustment (Caption only)
   (8) Comp Cb : For Color (Cb) adjustment (Caption only)
   (9) Comp Cr : For Color (Cr) adjustment (Caption only)
   (10) Comp Tint : For TINT adjustment (Caption only)

   Sub
   (1) pComm Brt : Fir BRIGHNTNESS adjustment (PIP Video, S-Video)
   (2) pComm Cont : For CONTRAST adjustment (PIP Video, S-Video)
   (3) pComm Peak : For SHAPNESS adjustment (PIP Video, S-Video)
   (4) pCVBS Color : For COLOR adjustment (PIP Video, S-Video)
   (5) pCVBS Tint : For TINT adjustment (PIP Video, S-Video)

4) 9883_G : Graphic port A/D converter control values. Used to adjust picture quality of PC input.
   [Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values.

(1) Bias R : For R BRIGHTNESS adjustment (PC)
(2) Bias G : For G BRIGHTNESS adjustment (PC)
(3) Bias B : For B BRIGHTNESS adjustment (PC)
(4) Gain R: For R CONTRAST adjustment (PC)
(5) Gain G: For G CONTRAST adjustment (PC)
(6) Gain B: For B CONTRAST adjustment (PC)

5) 9883_V : Video port A/D converter control values. Used to adjust picture quality of Component inputs.
[Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values.
(1) Bias Cr : For Cr BRIGHTNESS adjustment (Component)
(2) Bias Y : For Y BRIGHTNESS adjustment (Component)
(3) Bias Cb : For Cb BRIGHTNESS adjustment (Component)
(4) Gain Cr : For Cr CONTRAST adjustment (Component)
(5) Gain Y : For Y CONTRAST adjustment (Component)
(6) Gain Cb : For Cb CONTRAST adjustment (Component)

6) MDIN150 : Used to adjust DEINTERLACE performance. Affect component & video input.
[Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values.
(1) Bright : For BRIGHTNESS adjustment (Video, S-video, Component)
(2) Contrast : For CONTRAST adjustment (Video, S-video, Component)
(3) Color : For COLOR adjustment (Video, S-video, Component)
(4) NR : Noise Reduction Filter adjustment (Video, S-video, Component)

7) Enhncr : Picture Quality Enhancer. Used to adjust picture quality for all inputs.
[Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values.
(1) B&W : Black & White Stretch (ON: enables B Emph, W Emph, and G Emph)
(2) FCT : Favorite Color Technology
(3) ACR : Accurate Color Reproduction
(4) Gamma : Video Inverse Gamma(=1.47) Correction
(5) Dither : Error Diffusion
(6) SEISAI : Random dither pattern masking

8) MSP34xx : Sound processor
[Note] The following values do not need to be adjusted after replacing MAIN PCB. Therefore you do not need to change initial values.
(1) Sc pScale : Prescale adjustment for external input(Video, Component, PC, DVI etc.)
(2) FM pScale : FM/AM prescale adjustment
(3) NC pScale : NICAM prescale adjustment

9) M2 : Teletext decoder
(1) Contrast : Text Contrast
(2) H Posi Full : Adjust H position in Full Text
(3) Language

Teletext Language Group Table

0	West Europe(England/France/Sweden/Czech/Germany/Spain/Italy)
1	East Europe(Poland/France/Sweden/Czech/Germany/Slovenia/Italy/Romania)
2	Turkish/Greek(England/France/Sweden/Turkey/Germany/Spain/Italy/Greece)
3	Cyrillic
4	ARAB/HEBREW
5	FARSI ALL

(4) Option
0 : Top
1 : Flop
2 : Top & Flop
(5) CIK Full C40 : Adjust pixel clock in half text 40 column text
(6) CIK Full C56 : Adjust pixel clock in half text 56 column text
(7) Vposi Full : Adjust V position in Full Text

10) MISC
(1) TST PTRN AT : Cycled patterns from R G B WH every 1 minute automatically.
(2) TST PTRN MA : Cycled patterns from BK WH R G B by pressing volume up key
(3) AT Search ON : Auto program search and sorting.
(4) TV AT OFF : When in TV mode and no signal is detected for 30 min, the set is turned off automatically.

11) INFOR : MICOM(firmware) version information
(9 digits model name, 2digits year, 2digits month, and 2 digits date : e.g. DPP4242xH_050315)

12) RESET
(1) LEVEL 1: Reset all values (service mode & user menu).
(2) LEVEL 2: Reset all except PW181-1 values
(3) FACTORY: Reset user menu values

13) PANEL
(1) 50Hz Mode :
- STD1 : Standard Mode 1 (Peak Luminance 100%, False Contour Good)
- STD2: Standard Mode 2 (Peak Luminance 100%, False Contour Bad)
- HIQ1: High Image Quality Mode 1 (Peak Luminance 70%, False Contour Very Good)
- HIQ2: High Image Quality Mode 2 (Peak Luminance 70%, False Contour Good)
(2) 60Hz Mode :
- STD1: Standard Mode 1 (Peak Luminance 100%, False Contour Good)
- STD2: Standard Mode 2 (Peak Luminance 100%, False Contour Bad)
- HIQ1: High Image Quality Mode 1 (Peak Luminance 70%, False Contour Very Good)
- HIQ2: High Image Quality Mode 2 (Peak Luminance 70%, False Contour Good)
(3) Frame Conv :
- Off: Input Vsync Frequency = Panel Display Vsyinc Frequency
- On: Panel Display Vsync Frequency Fixed (=60Hz)
(4) GAMMA : Panel Inverse Gamma Correction
(5) ED : Panel Error Diffusion
(6) EXT PLE : 30% increased luminance

6. Adjusting Method

6-1. WHITE BALANCE Adjustment

1) Apply 5 Step Gray Scale pattern to Video input terminal (Pattern generator: MIK 7253S)

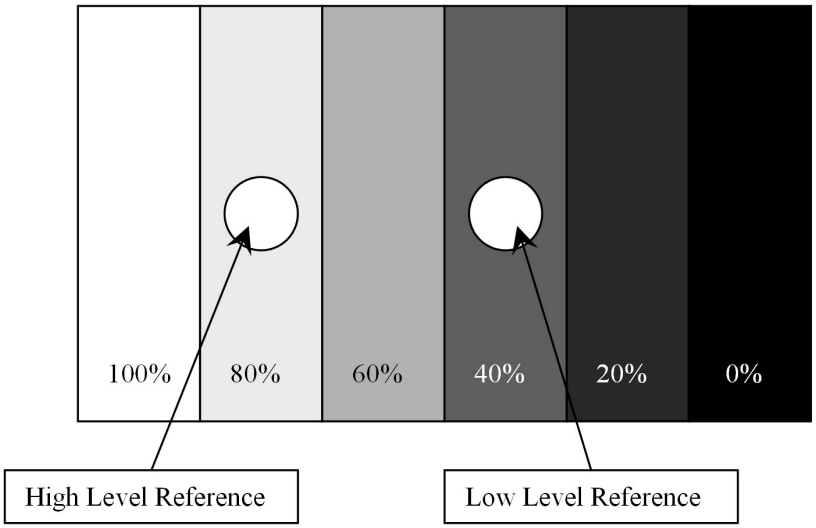


Figure 6-1 Step Gray Scale Pattern

2) Check initial data from USER CONTROL (refer to 5-1)

3) In order to start Service mode, press button in following order "◀Vol -> Mute -> Recall (Display) -> Mute" of the remote control. And then select PW181-1 for checking initial data of the SERVICE MODE (refer to 5-2).

4) Attach the sensor of White Balance Meter (CA-100) to the 80% white level of the screen.

5) Adjust White Balance by controlling R, G, B GAIN.

· Control R, G, B GAIN values so that the ranges are within DP (Default Value)±10. If the gains are deviated from the range, the SET is disqualified.

· Set color coordinate to x=0.285±0.005, y=0.275±0.005, and the Color Temperature to greater than 10,000˚K.

6) Attach the sensor of White Balance Meter to 40% of white level on the screen

7) Adjust White Balance by varying the values of R,G, B BIAS.

· Control R, G, B BIAS values so that the ranges are within "Default Value" ±5. If deviate from the range, classify the SET disqualified.

· Set color coordinate to x=0.285±0.005, y=0.285±0.005.

8) Repeat from 4) to 7) until color coordinate is x=0.285±0.005, y=0.275±0.005, and then adjust Sub Contrast for that the luminance is above or equal to 150 Cd/m^2 when the sensor of White Balance Meter is attached to 100% of white level on the screen.

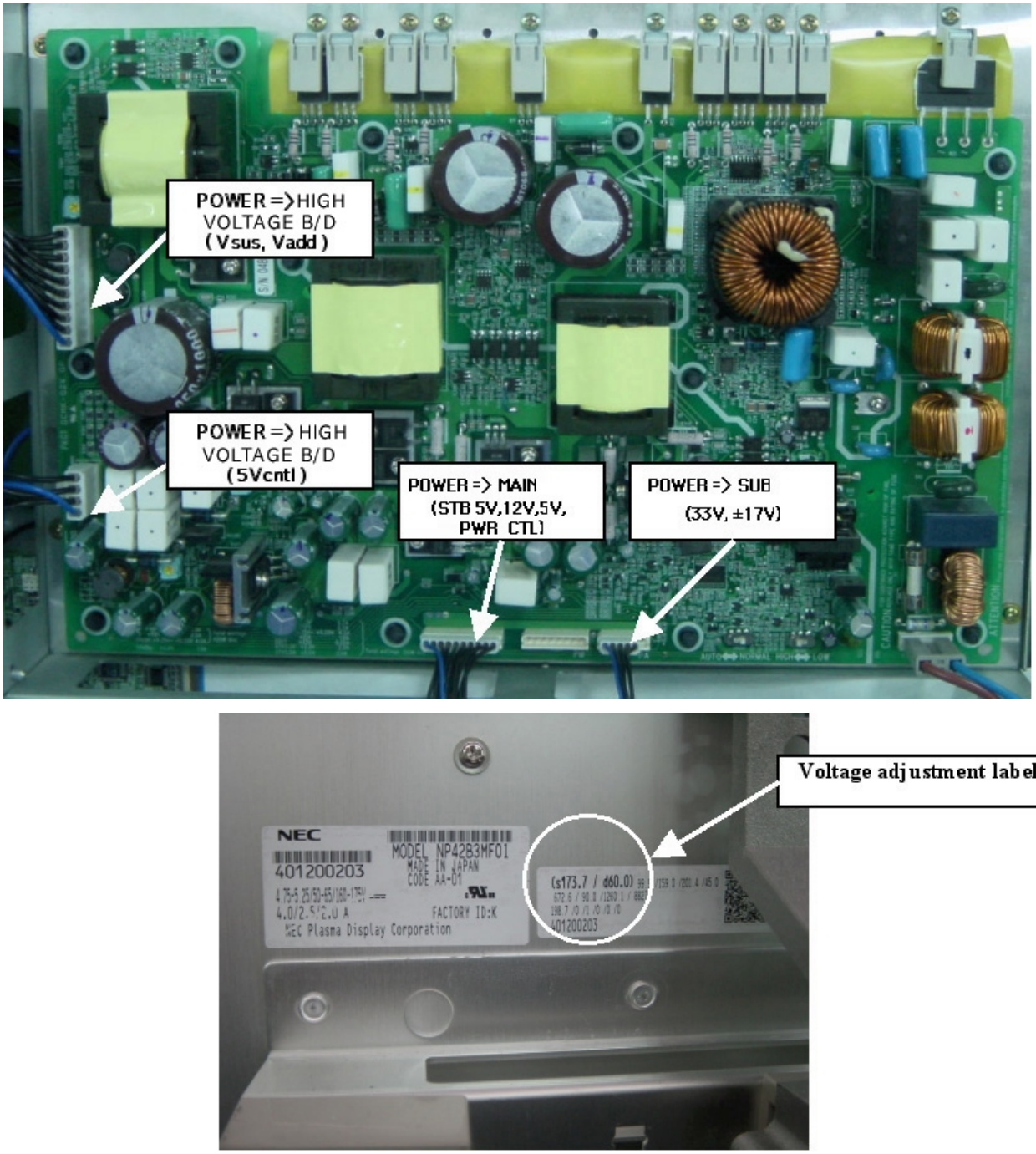
9) To exit the Service mode, press Menu button of the remote control.

6-2. POWER ADJUSTMENTS

- Video pattern condition: 100 IRE Full White Pattern
- Power Adjustment is controlling the panel values set by module maker previously. If there is problem after power adjustment, classify as a defect and contact PDP module maker.

1. Vs (Vsus Voltage): Sustain Voltage

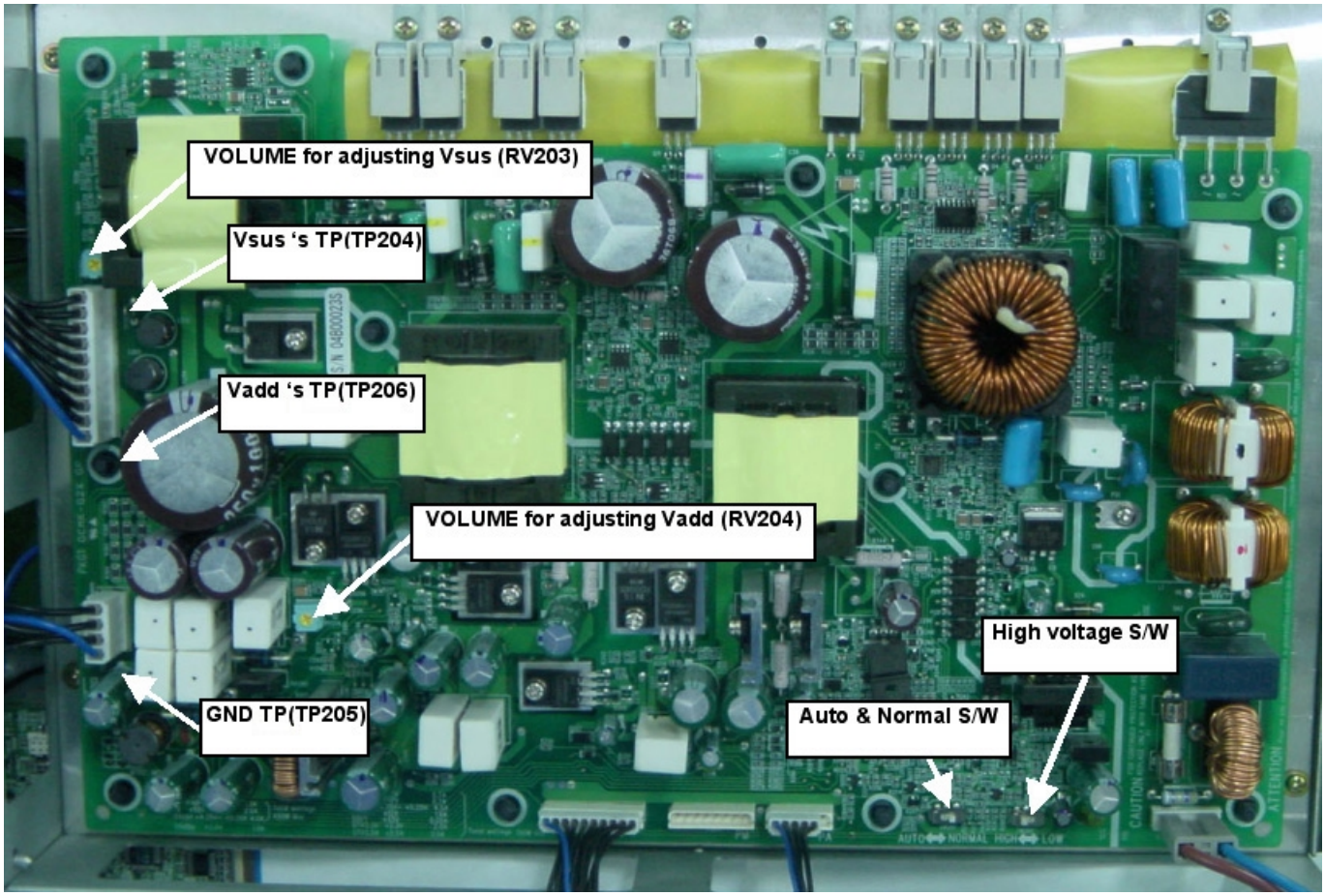
- Measurement equipment : Digital Volt Meter (DC Volt mode)
- Adjusting TP : TP204 (See Picture 6-2)
- Adjusting Voltage : The voltage which is written at upper center of DATA BAR in PDP Module. (Typical Voltage: 175 V, See Picture 6-1)



Picture 6-1. Power Connection and Voltage Adjustment Label

2. Vd (Vadd Voltage) : DATA Input Voltage

- ◆ Measurement equipment : Digital Volt Meter (DC Volt mode)
- ◆ Adjusting TP : TP206 (See Picture. 6-2)
- ◆ Adjusting VOLUME:
- ◆ Adjusting Voltage : The voltage which is written at upper center of DATA BAR in PDP Module. (Typical Voltage: Picture - Picture. 6-2)



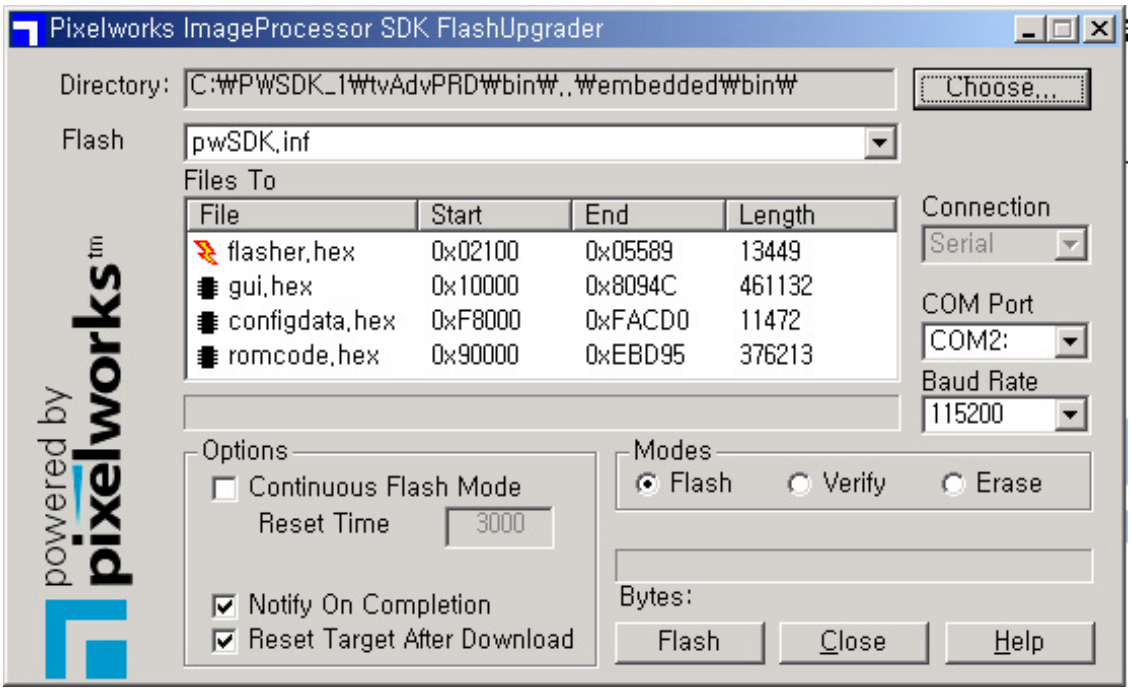
Picture. 6-2 Power Adjustment Points

< Note >

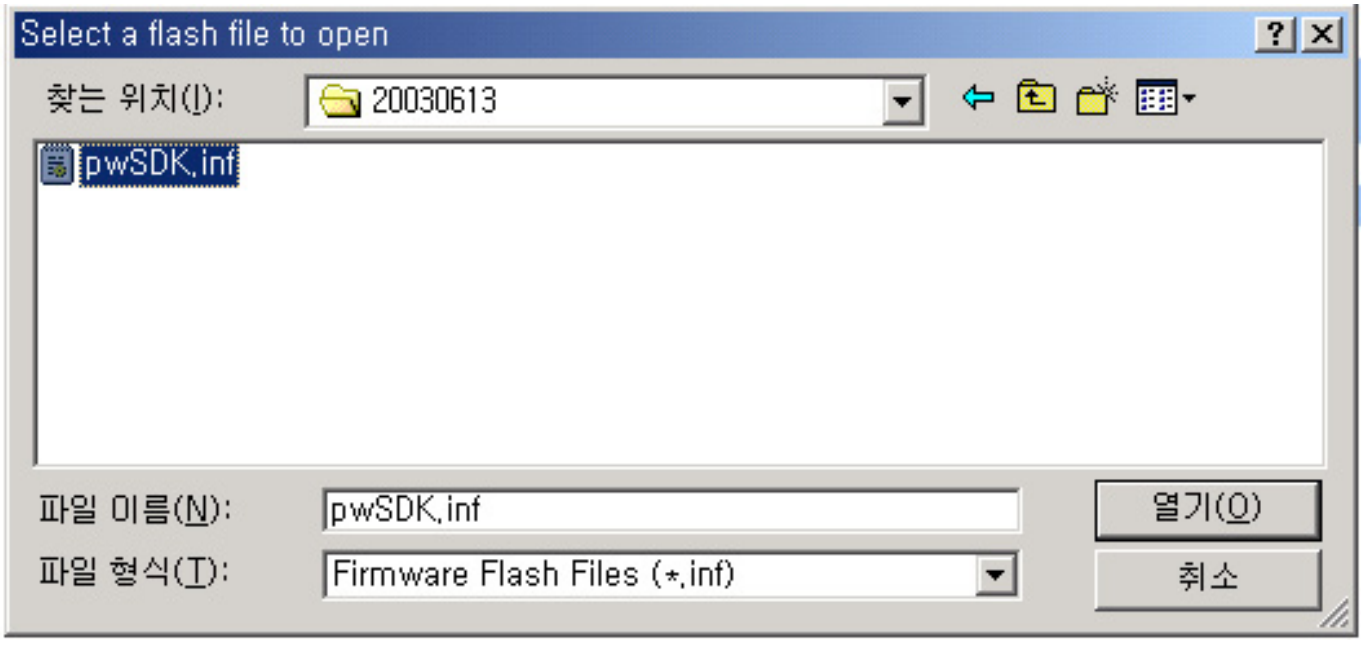
1. Auto & Normal S/W
   This switch is used to test power board therefore for normal operation always set it to "NORMAL".
   Do not touch while operating
2. High voltage S/W
   Do not touch while operating
3. When replacing a power board make sure to check these switches.
   · High voltage S/W -> "HIGH"
   · Auto & Normal S/W -> "NORMAL"

7. SOFTWARE UPGRADE Method

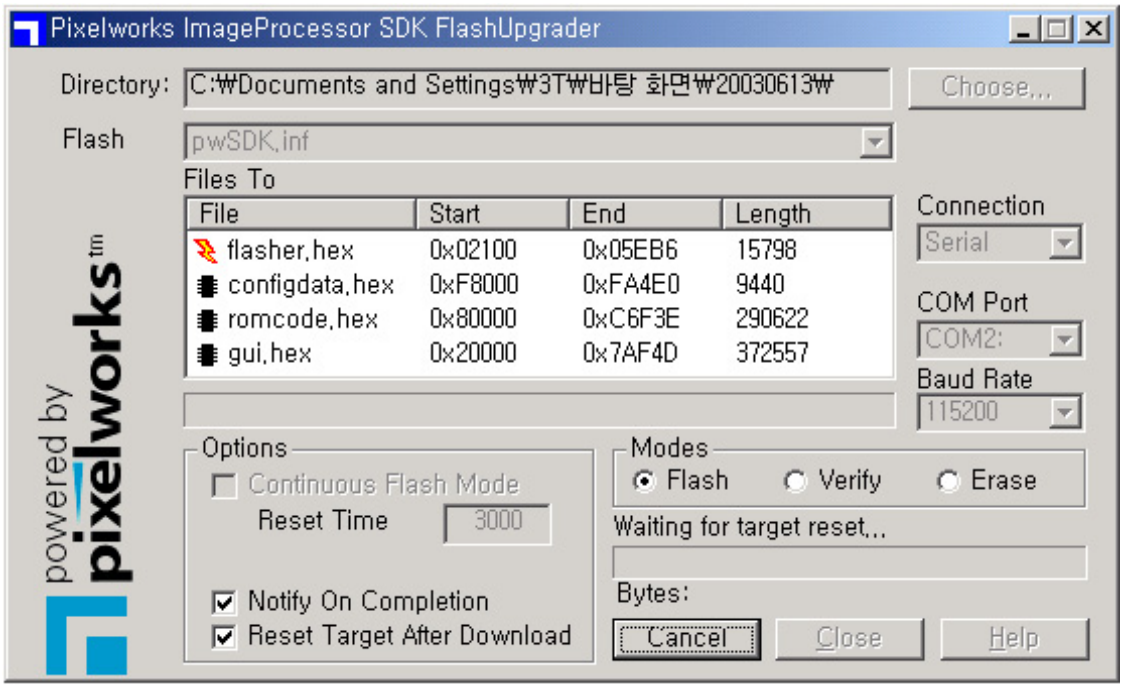
1. Check whether MAIN PCB is connected to SUB PCB(JP117 to JA109).
2. Connect 9-PIN serial cable to the serial port of the computer.
3. Connect the opposite end of the serial cable to RS-232C port of SUB PCB.
4. Run Flashupgrader.exe in the PC to excute the program as shown below.



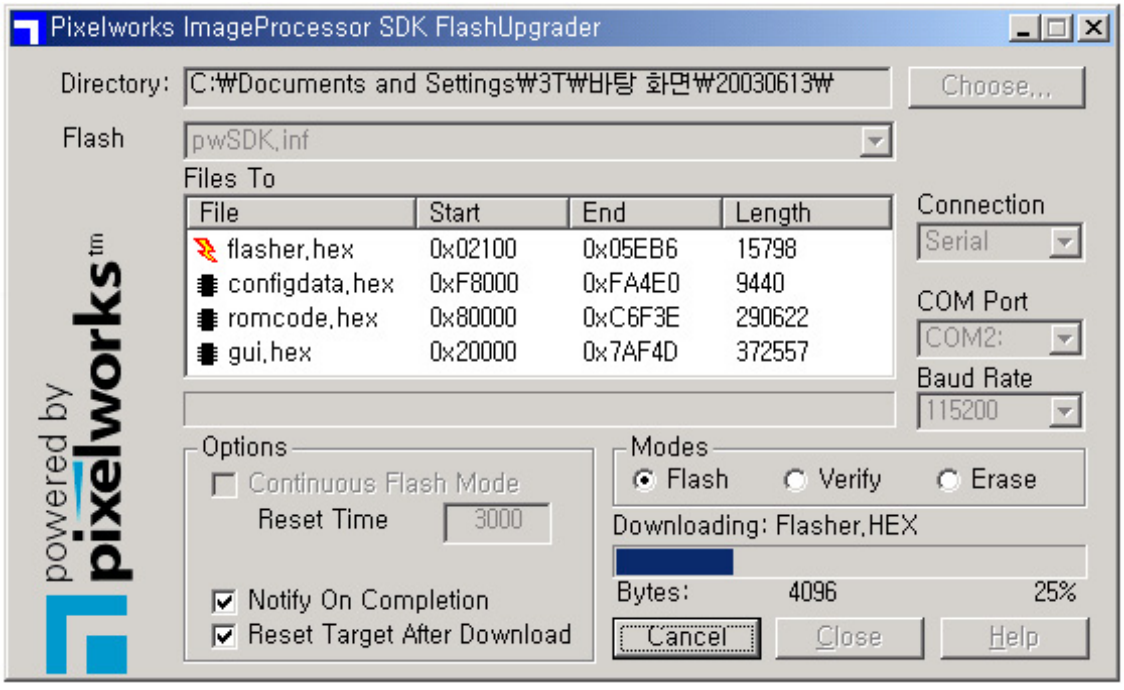
5. Select current Upgrade file
   - Click “Choose...” button to select the file you want to upgrade.
   - Select the file (pwSDK.inf) that you want to upgrade.



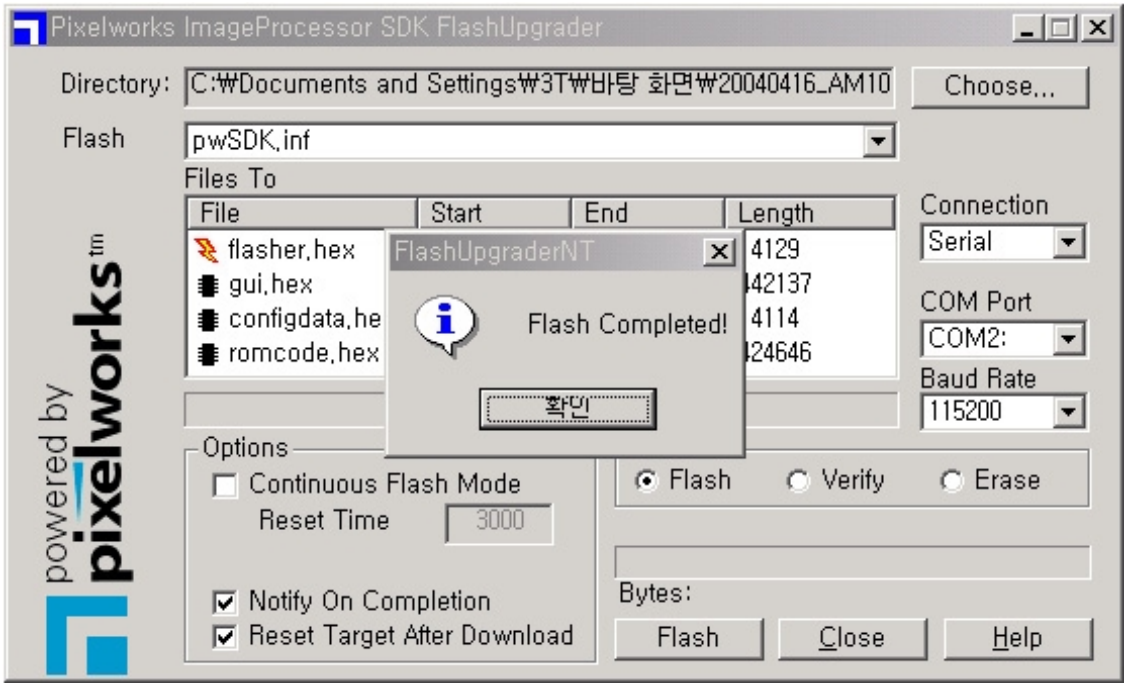
6. Select correct COM Port and Baud Rate(115200) as shown below. Then press Flash button to finish setup.



7. Turn on the ac power and then upgrade program will start the download as shown below.



8. When the upgrading is complete, a window (below) will be opened. Press “Finish” button to complete the process.

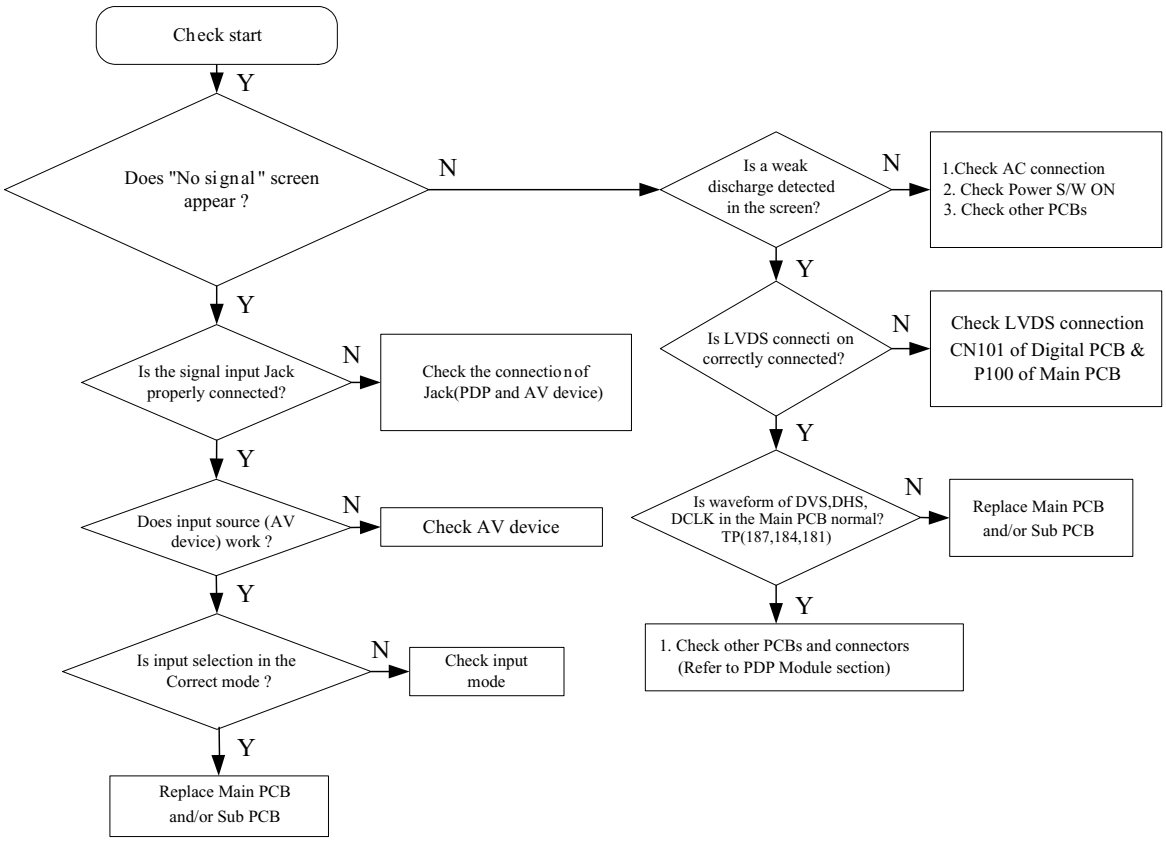


8. Main PCB Trouble Diagnosis

8-1. MAIN & SUB PCB Trouble Diagnosis

[NOTE] Refer to “PDP MODULE” section for trouble diagnosis other than MAIN, SUB and POWER PCB.

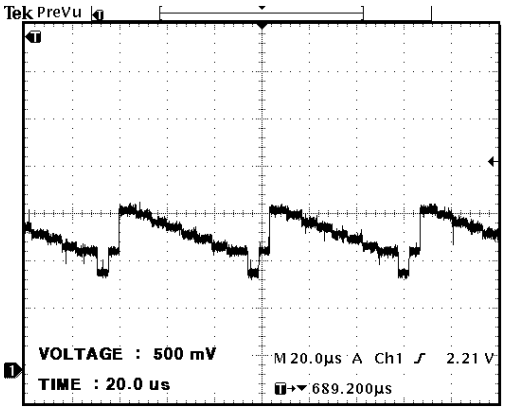
1. Common checking process when “No signal” or “No raster”
   (No signal: OSD is working but no images are displaying, No raster: Not even OSD is displaying)


Check start
Y
Does "No signal" screen appear ?
N
Is a weak discharge detected in the screen?
N
1.Check AC connection
2. Check Power S/W ON
3. Check other PCBs
Y
Y
Is LVDS connecti on correctly connected?
N
Check LVDS connection CN101 of Digital PCB & P100 of Main PCB
Y
Is the signal input Jack properly connected?
N
Check the connection of Jack(PDP and AV device)
Y
Is waveform of DVS,DHS, DCLK in the Main PCB normal? TP(187,184,181)
N
Replace Main PCB and/or Sub PCB
Y
Does input source (AV device) work ?
N
Check AV device
Y
1. Check other PCBs and connectors (Refer to PDP Module section)
Is input selection in the Correct mode ?
N
Check input mode
Y
Replace Main PCB and/or Sub PCB

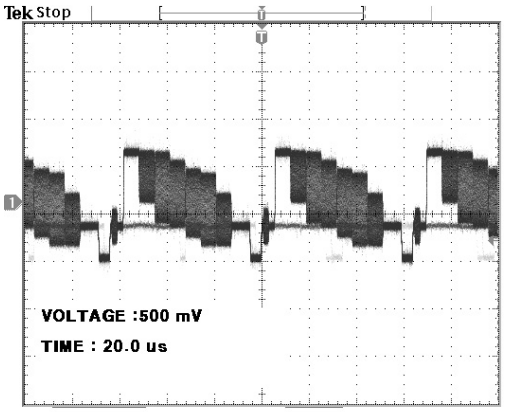
2. When “No signal” in Video, S-VIDEO, and Component modes.
   (1) First check if PC input is working.
   - → If PC is not working replace MAIN PCB.
   - → For detail examination, with an oscilloscope check TP188, TP184 and TP187 signal explained in A/V block section.
   - → If TP188, TP184 or TP187 signal does not appear, replace MAIN PCB.

   (2) Checking waveforms with COLOR BAR pattern(for detail examination only)

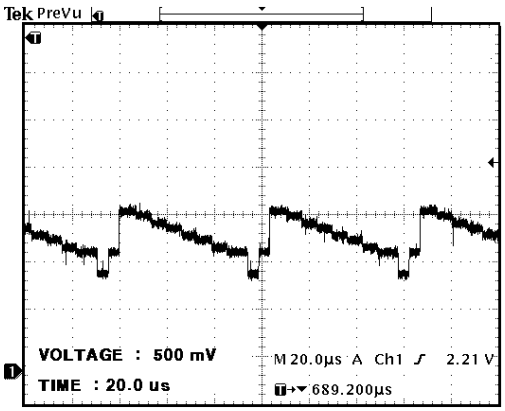
◆ When Y Cb Cr input : TP261 located in the center of the PCB near IC121.



◆ COMPOSITE Input : Check Positive polarity of CE203 located near IC132.



◆ S- VHS input : Check Negative polarity of CE284 located near IC159.



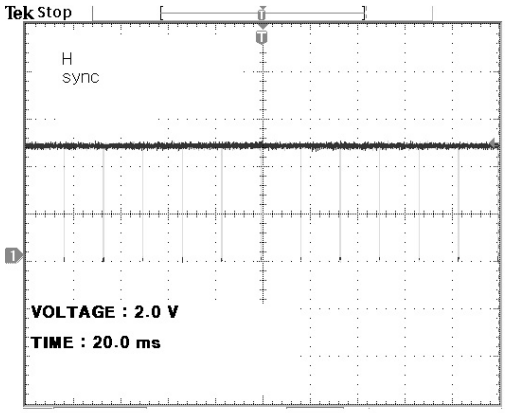
➞ If above signals do not appear, MAIN PCB needs to be replaced.

(3) With Video or S-Video inputs

Check TP138(V sync), TP139(H sync)

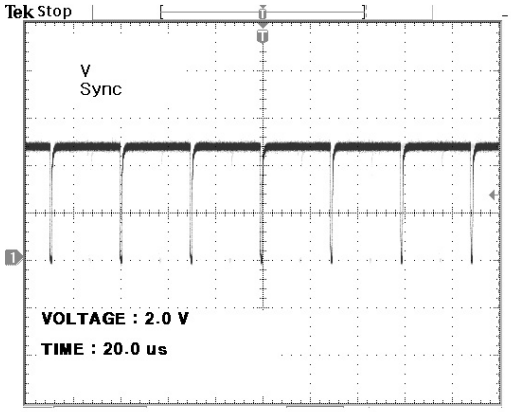
➞ If signals do not appear, replace MAIN PCB.

(4) With Component inputs
Check TP136(V sync), TP135(H sync)
➞ If signals do not appear, replace MAIN PCB.



3. When DTV (1080i, 720P, 480P) signal do not appear on screen
(1) Input PC or VIDEO signal and see if PC or VIDEO images are displaying.
➞ If “no signal”, check TP188, 187 and 184.
➞ If DCLKB, DHS and DVS signal do not appear, replace MAIN PCB.

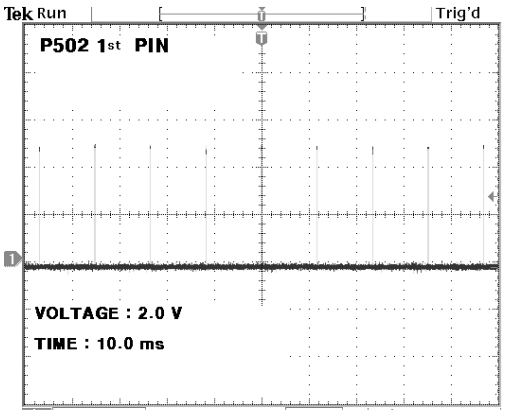
(2) Check TP136(V sync), TP135(H sync) <when 1080i >

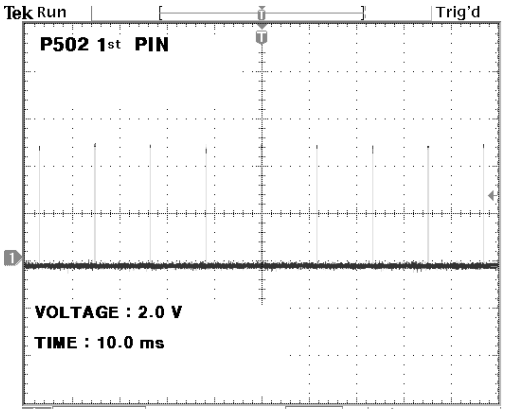


➞ If above signals do not appear, replace MAIN PCB.

4. When PC signal do not appear on screen
(1) Input DTV or VIDEO signal and see if DTV or VIDEO images are displaying.
➞ If “No signal”, check TP188, 184 and 187.
➞ If TP188, 184 and 187 signal do not appear, replace MAIN PCB.

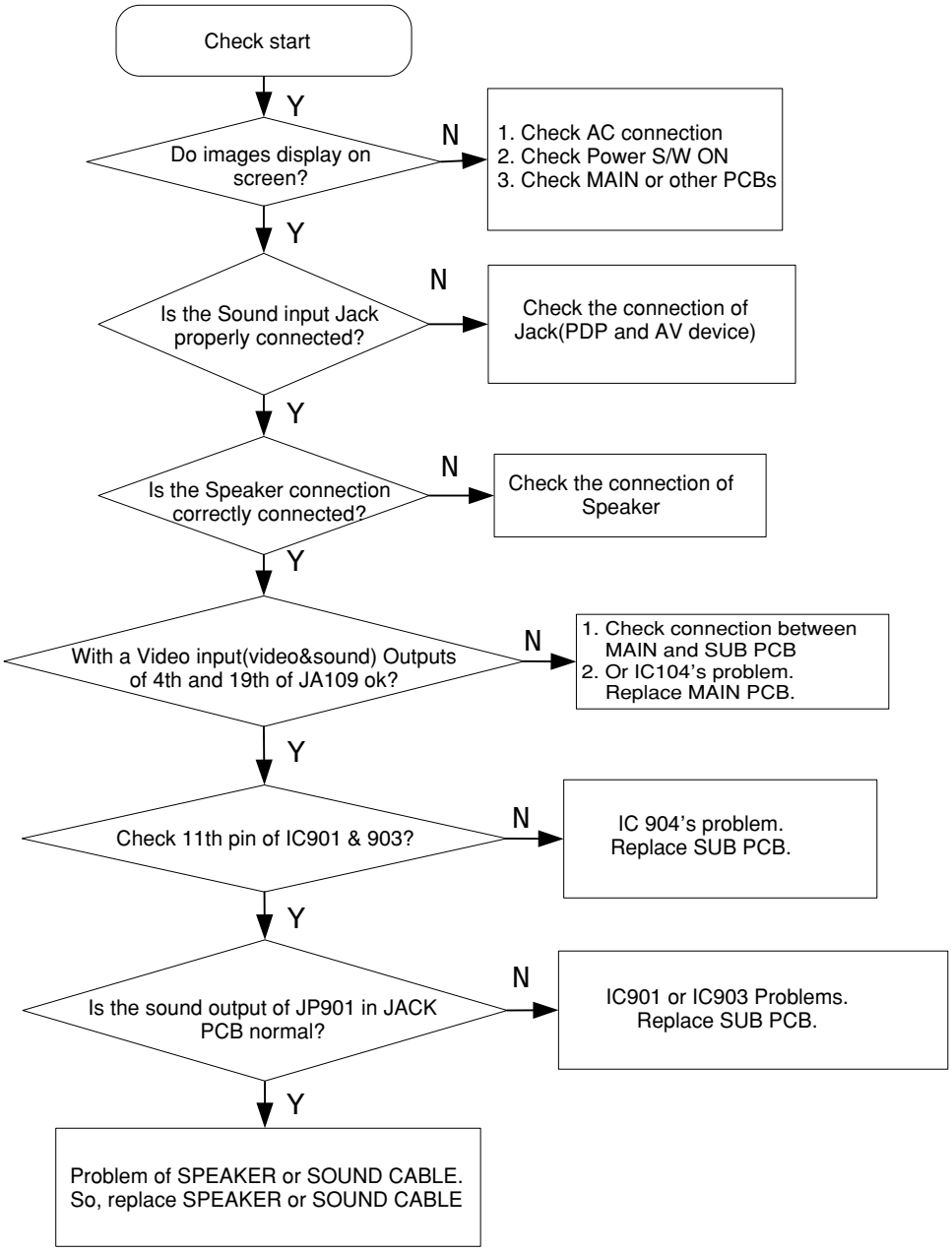
(2) Check TP124 (V SYNC), TP125 (H SYNC) (when 800 X 600).



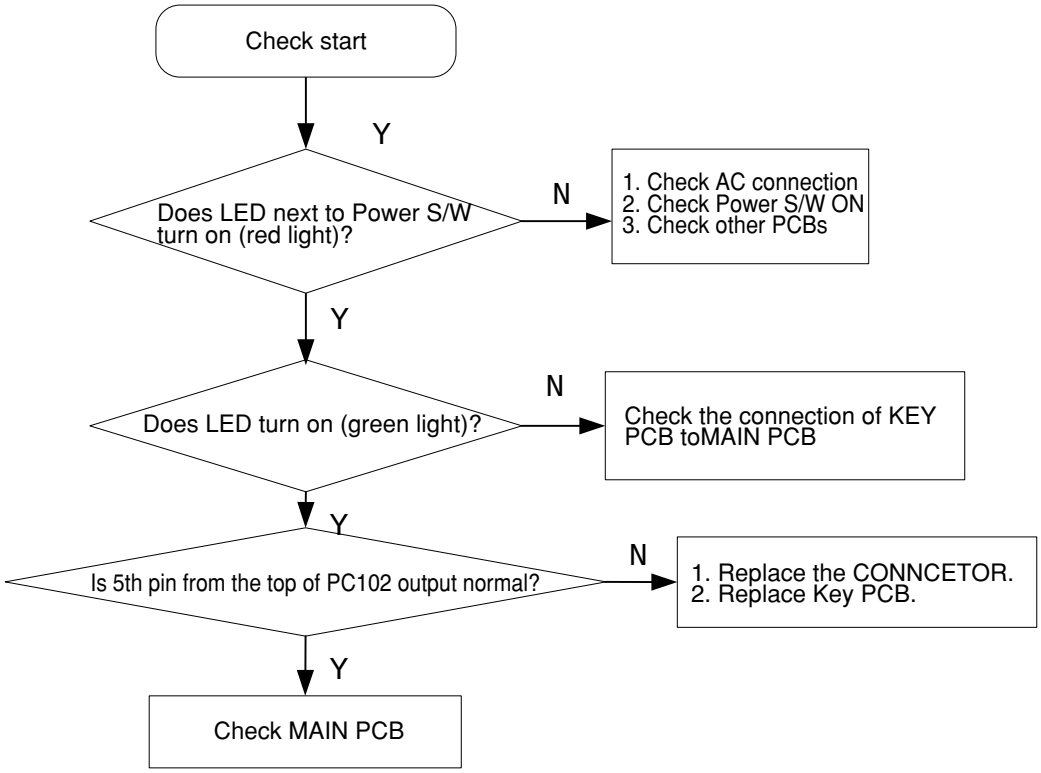


➞ If above signal do not appear, replace MAIN PCB.

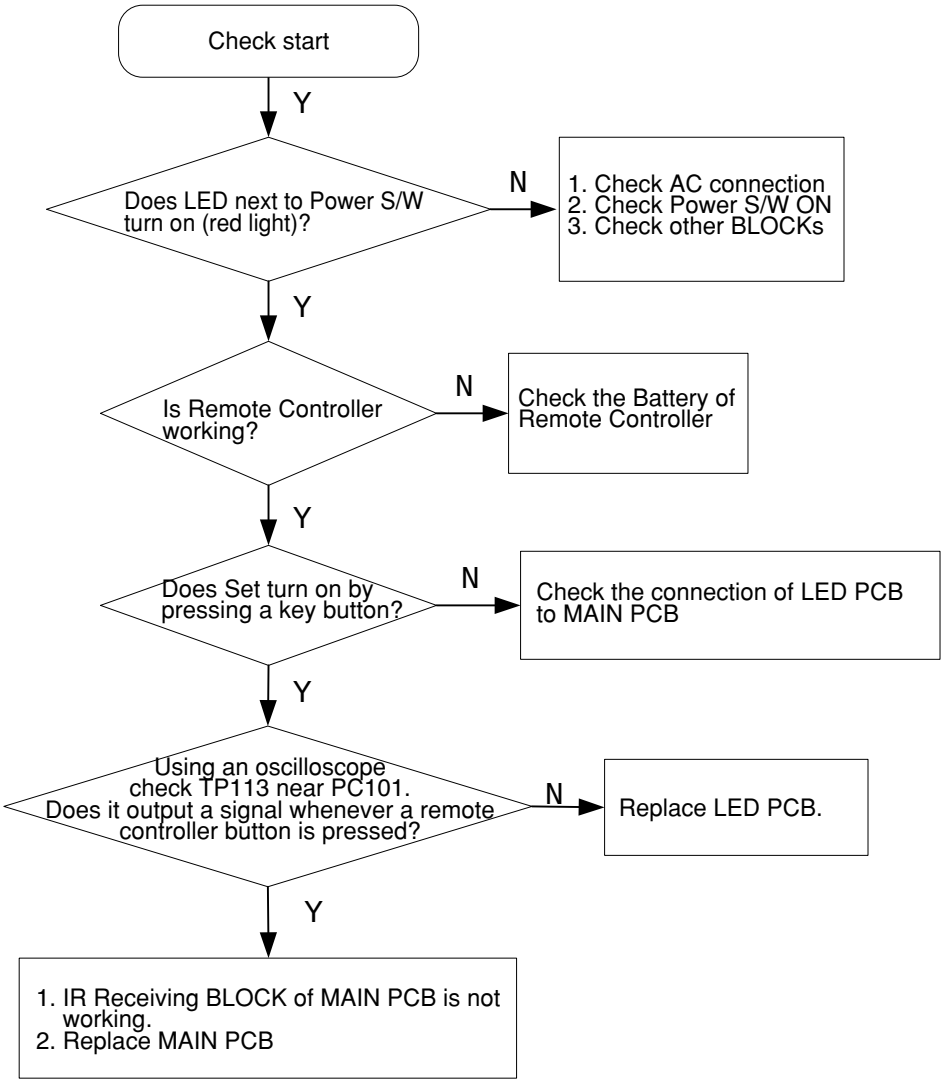
5. When No Sound


Check start
Y
Do images display on screen?
N
1. Check AC connection
2. Check Power S/W ON
3. Check MAIN or other PCBs
Y
Is the Sound input Jack properly connected?
N
Check the connection of Jack(PDP and AV device)
Y
Is the Speaker connection correctly connected?
N
Check the connection of Speaker
Y
With a Video input(video&sound) Outputs of 4th and 19th of JA109 ok?
N
1. Check connection between MAIN and SUB PCB
2. Or IC104's problem. Replace MAIN PCB.
Y
Check 11th pin of IC901 & 903?
N
IC 904's problem. Replace SUB PCB.
Y
Is the sound output of JP901 in JACK PCB normal?
N
IC901 or IC903 Problems. Replace SUB PCB.
Y
Problem of SPEAKER or SOUND CABLE. So, replace SPEAKER or SOUND CABLE

6. When Key does not operate



7. When Remote Controller does not operate


Check start
Y
Does LED next to Power S/W turn on (red light)?
N
1. Check AC connection
2. Check Power S/W ON
3. Check other BLOCKs
Y
Is Remote Controller working?
N
Check the Battery of Remote Controller
Y
Does Set turn on by pressing a key button?
N
Check the connection of LED PCB to MAIN PCB
Y
Using an oscilloscope check TP113 near PC101. Does it output a signal whenever a remote controller button is pressed?
N
Replace LED PCB.
Y
1. IR Receiving BLOCK of MAIN PCB is not working.
2. Replace MAIN PCB

8-2. POWER PCB Trouble Diagnosis

◆ After checking High Voltage Board / Scan Relay Board / Data Relay Board (refer to II. PDP MODULE), and the set still does not operate, then check if the following Power PCB's Trouble Symptoms appear.

→ After unplugging Power Connectors of Power PCB (CN806 and CN805) and checking remaining voltage, there still exist several tens of remaining voltage.

→ When output condition of Power PCB is set to low-voltage, output voltage table lists 3~7 are NOT normal. Or when set to high-voltage, output voltage table list 1~2 are NOT normal. (Refer to 4-3)

→ When output condition of Power PCB is set to low-voltage, output voltage table lists 3~7 are normal. But when set to high-voltage, output voltage table list 1~2 are NOT normal. (Refer to 4-3)

→ After turning on the PDP set with Remote Controller when output condition of Power Module is set to high-voltage, the LED turn "Green" but the "Power Shut Down" happens after 2~3 seconds.

◆ If high voltage (Vsus, Vadd) measured from Power PCB is different from that of optimum adjusting voltage label, re-adjust the voltages referring to "I. 6-2. POWER Adjustments"

9. TROUBLE DIAGNOSIS

[NOTE] Refer to “PDP MODULE” section for module diagnosis.

* Refer to Chapter II for Symptoms of other parts with exception of MAIN, SUB PCB and POWER PCB Trouble.

9-1. Facts you must know when trouble diagnosing or repairing

(1) Trouble diagnosing and repairing of set mean find out which PCBs or blocks are not working and replace them with new PCBs. Repairing the broken PCBs are not necessary. Keep the broken PCBs and return them to service center or R&D center.

(2) This TROUBLE DIAGNOSIS list only contains representative and simple PCB trouble diagnosis and Module Exchange method. Therefore, if you find Sets that are difficult to diagnose or to repair, contact R&D center.

(3) Basic TROUBLE DIAGNOSIS procedure
Check problem Symptoms -> Open BACK COVER -> Trouble Diagnosis e Replace broken PCB -> Adjust new PCB module -> HEATRUN (for at least 30 minutes, input TEST PATTERN FULL WHITE), full FUNCTION test -> Repair Complete.

(4) Required equipments for trouble diagnosis
- DIGITAL MULTIMETER (User Mode : measure DC VOLTAGE, measure DIODE VOLTAGE, SHORT-OPEN TEST)
- Screwdriver (or electric screwdriver), plastic adjusting tool
- Oscilloscope (for detailed examination only)

(5) Each BLOCK operations explained in this manual include OSCILLOSCOPE waveforms, but these are for reference only and utilizing them to repair PCBs is not necessary.

(6) Before replacing PCBs, you MUST turn the AC Switch “OFF”.

(7) After replacing High Voltage Board, POWER, and MAIN & SUB PCB, extra adjustment might be needed. (Refer to I. 6. Adjusting Method)

(8) After the set is repaired, leave BACK COVER open for followings. Run HEATRUN for at least 30 minutes by displaying TEST PATTERN (FULL WHITE) of SERVICE MODE (Refer to Service Manual I.5. Service Mode). Check the screen conditions and basic functions (remote control operation etc.).

(9) After BACK COVER is closed, redo HEATRUN for at least one hour with FULL WHITE input using TEST PATTERN of SERVICE MODE. Check the screen conditions and basic functions.

9-2. Typical Symptoms of PCB problem or bad Connection

(1) Symptoms of POWER PCB Trouble
<Symptom.1> Not even a weak discharge detected on the screen.
<Symptom.2> Discharge on the screen is unstable
<Symptom.3> Set is making unusual noise
<Symptom.4> POWER SHUT DOWN occur (refer to Service Manual I. 9-3)

(2) Symptoms of MAIN or SUB PCB Trouble

<Symptom.1> Only a weak discharge shows on the screen, but it is displaying No images.
<Symptom.2> Images are abnormal
<Symptom.3> Particular input signal (Video, PC or Component etc.) does not work.
<Symptom.4> No SOUND
<Symptom.5> Occasionally, set does not operate normally. Turning off and on the AC power make the set to operate normal again.
<Symptom.6> Remote Control or KEY does not work.
<Symptom.7> POWER SHUT DOWN occur (refer to Service Manual I. 9-3)

(3) Representative Symptoms caused by bad Connection between PCBs.

[Note] Dust or extraneous materials may cause bad connections. Most of the time, applying soft brush, AIR FRESHER, or breath to clean dust or extraneous materials can solve it. And then reassemble the Connector.

9-3. Trouble Diagnosis and Repairing Method for Representative Symptoms

(1) When POWER SHUT DOWN occurs

<1> Definition of “SHUT DOWN”

- While LED color is green, POWER PCB does not make any operating noise. (Red: STAND BY, Green: Operating)
- When the set is turned on power relay does not operate normally, and POWER PCB does not make any operating noise.

<2> Trouble Repairing Procedure

- As shown in Fig. 5, first check whether “LOW VOLTAGE” part or “HIGH VOLTAGE” part has problems.
- If “LOW VOLTAGE” part’s problem is detected, diagnose and repair the SET as shown in Fig. 6.
- If “HIGH VOLTAGE” part’s problem is detected, diagnose and repair the SET as shown in Fig. 6.
- <Caution1> When disconnecting/connecting connectors, you MUST turn “OFF” the AC power and check the direction and position of the connectors before working.
- <Caution2> Whenever you reassemble connectors connecting High Voltage Board and POWER PCB(CN805, CN806), remaining voltage still exists in the POWER PCB could cause electric shock and damage the set. Therefore always reassemble the connectors several minutes after AC power is off. To be more careful, using a MULTIMETER you should check to see if Vsus is less than 10V and then connect connectors.

(2) When weak Discharge exists on screen but “OSD screen” can not be seen

<1> Definition of this symptom
- When the set is turned on, screen is BLACK but Weak Discharge (luminescence) exists.
- OSD does not show on screen and the set does not respond to remote controller or KEY panel buttons.

<2> PCB CHECK PRIORITY
- MAIN PCB, SUS PCB

<3> Repairing Procedure
- Check LVDS cable (MAIN PCB to DIGITAL PCB) first and then other connectors connecting MAIN PCB. If this does not fix the problem replace MAIN PCB.

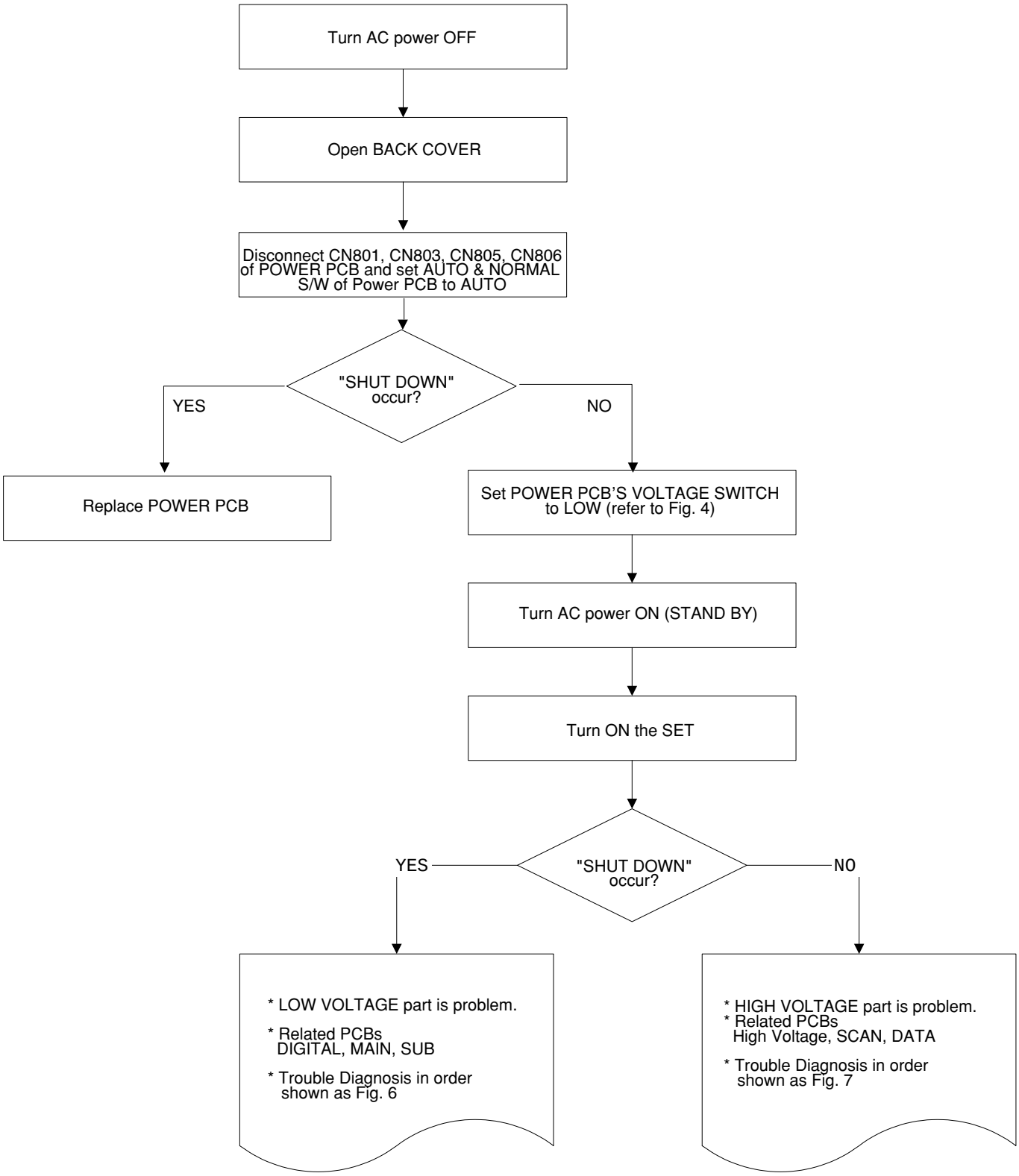

Turn AC power OFF
Open BACK COVER
Disconnect CN801, CN803, CN805, CN806 of POWER PCB and set AUTO & NORMAL S/W of Power PCB to AUTO
"SHUT DOWN" occur?
YES
NO
Replace POWER PCB
Set POWER PCB'S VOLTAGE SWITCH to LOW (refer to Fig. 4)
Turn AC power ON (STAND BY)
Turn ON the SET
"SHUT DOWN" occur?
YES
NO
* LOW VOLTAGE part is problem.
* Related PCBs DIGITAL, MAIN, SUB
* Trouble Diagnosis in order shown as Fig. 6
* HIGH VOLTAGE part is problem.
* Related PCBs High Voltage, SCAN, DATA
* Trouble Diagnosis in order shown as Fig. 7

Fig. 5 Trouble Diagnosis Flow when "SHUT DOWN" occurs

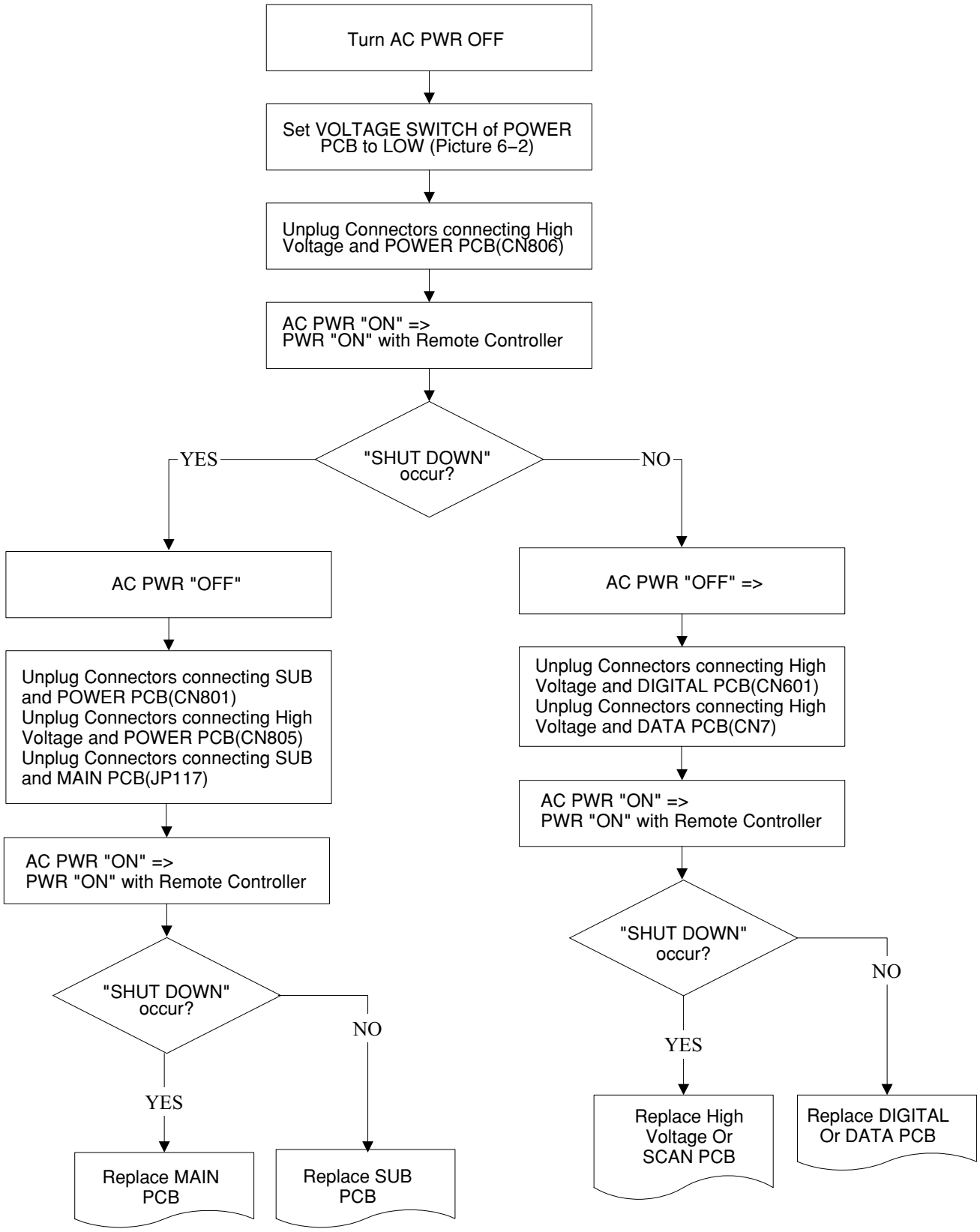

Turn AC PWR OFF
Set VOLTAGE SWITCH of POWER PCB to LOW (Picture 6–2)
Unplug Connectors connecting High Voltage and POWER PCB(CN806)
AC PWR "ON" => PWR "ON" with Remote Controller
"SHUT DOWN" occur?
YES
NO
AC PWR "OFF"
Unplug Connectors connecting SUB and POWER PCB(CN801)
Unplug Connectors connecting High Voltage and POWER PCB(CN805)
Unplug Connectors connecting SUB and MAIN PCB(JP117)
AC PWR "ON" => PWR "ON" with Remote Controller
"SHUT DOWN" occur?
NO
YES
Replace MAIN PCB
Replace SUB PCB
AC PWR "OFF" =>
Unplug Connectors connecting High Voltage and DIGITAL PCB(CN601)
Unplug Connectors connecting High Voltage and DATA PCB(CN7)
AC PWR "ON" => PWR "ON" with Remote Controller
"SHUT DOWN" occur?
NO
YES
Replace High Voltage Or SCAN PCB
Replace DIGITAL Or DATA PCB

Fig. 6 Trouble Diagnosis Flow when LOW VOLTAGE “SHUT DOWN” occurs

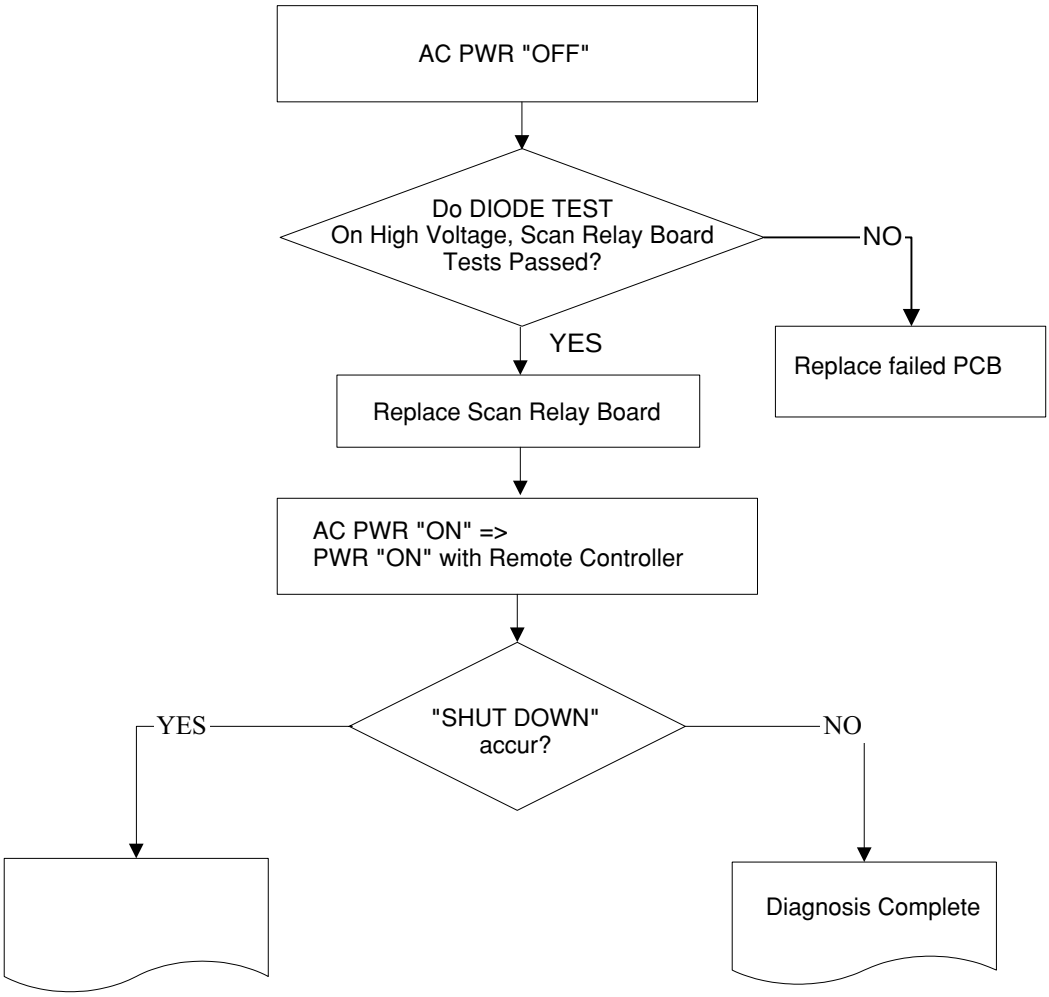
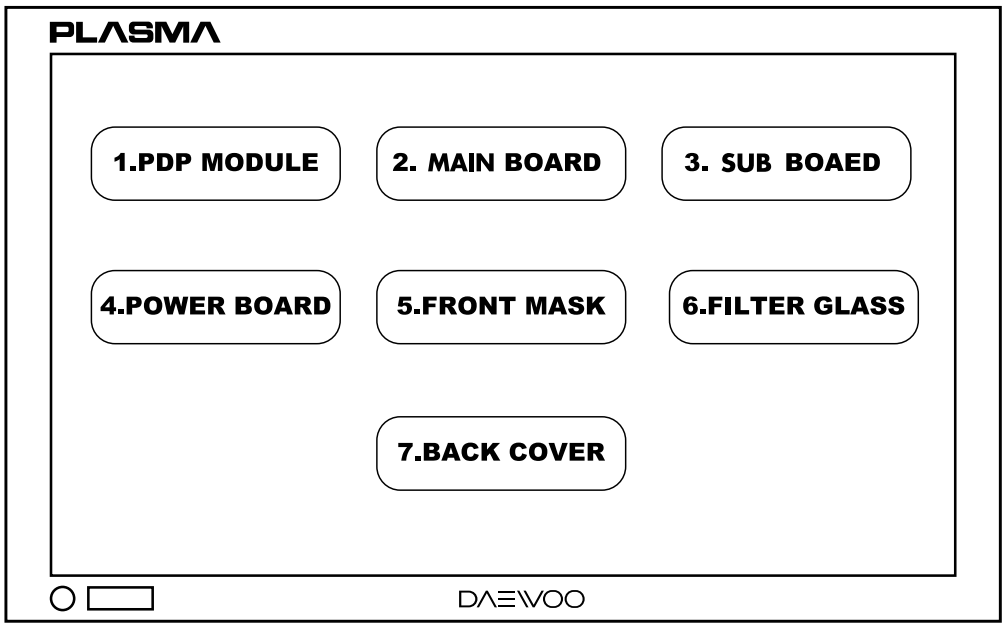


Fig. 7 Trouble Diagnosis Flow when HIGH VOLTAGE “SHUT DOWN” occurs

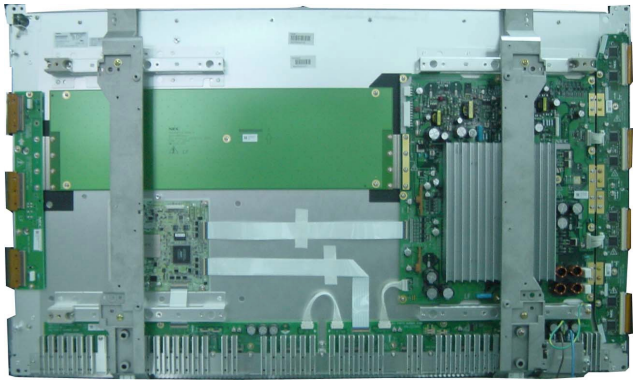
10. ASSEMBLY LIST

No.	PCB ASS'Y NAME	ASS'Y CODE	ASS'Y DESCRIPTION
1	PCB MAIN MANUAL AS	PTMPMSG069	DPP-4272NHS
2	PCB SUB MANUAL AS	PTSBMSG069	DPP-4272NHS
3	CABINET AS	PTCACAG069	DPP-4272NHS
4	COVER BACK AS	PTBCSHG047	DPP-4272NHS
5	MODULE PDP	4850M07610	NP42B3MF01
6	MODULE POWER	4850M07910	1H217W
7	HIGH Voltage PKG	485AS06490	PKG42B3G1-01D
8	Common Bypass PKG	485AS06590	PKG42B3J4/42D2J4/35B2J4-01A
9	Common Relay PKG	485AS06690	PKG42B3J3-01A
10	Data Relay PKG(L)	485AS06790	PKG42B3J1-02B
11	Data Relay PKG(R)	485AS06890	PKG42B3J2-02B
12	Scan Relay PKG-T	485AS06990	PKG42B3E1-01B
13	Scan Relay PKG-B	485AS07090	PKG42B3E2-01B
14	Digital PKG	485AS07290	PKG42B3C1-01D-06
15	GLASS FILTER	485A101280	M4203-JW0555
16	CONNECTOR	4850705N31	12505HS-05+12505TS+ULW=650
17	CONNECTOR	4850706N23	12505HS-06+12505TS+ULW=500
18	CONNECTOR	4850710N16	YMH025-10R+YMT025R+ULW=250
19	CONNECTOR	4850732N01	YDH200-32 50MM
20	CONNECTOR	4850724N01	YDH200-24 50MM
21	CONNECTOR	4950704S56	YH396-04V+YT396+ULW=600
22	CONNECTOR	4850710N15	YH396-10V+YT396+ULW=600
23	CONNECTOR	4850706S25	YMH025-06R+YMH025-06R+ULW=300
24	CONNECTOR	4850702S27	YFH800-02+4272NH+ULW=450/400/600
25	PLATE INLET FILTER	4855217101	A5052 T1.0
26	SPEC PLATE	4955400100	P.E FILM 91.5X63
27	SCREW SPECIAL	4856017100	WAS M5X14
28	BRKT POWER MODULE	4853220100	SECC T1.0
29	BRACKET POWER SW	4953201000	SECC T0.8
30	MASK FRONT	4852089730	FR ABS GY
31	FILTER EMI	5P06GEEW3E	06GEEW3ES
32	SW PUSH	5S40101005	KDC-A04-10(B)-A1-G

11. STRUCTURE OF PDP SET

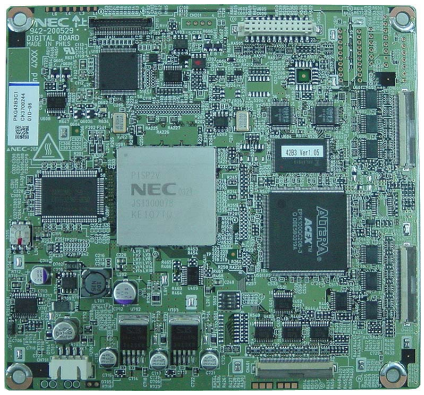
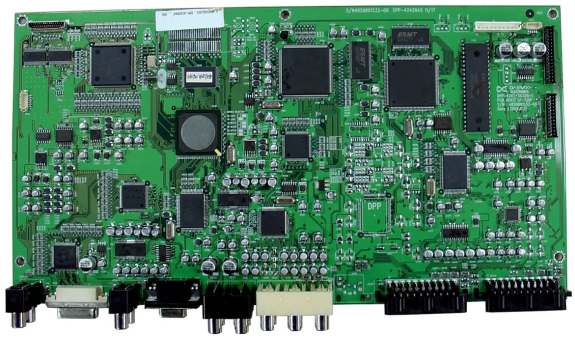
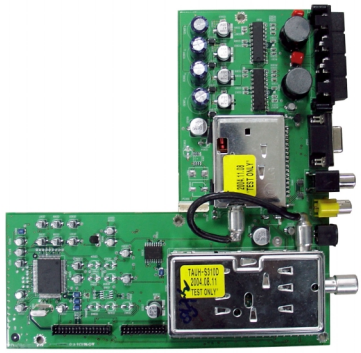
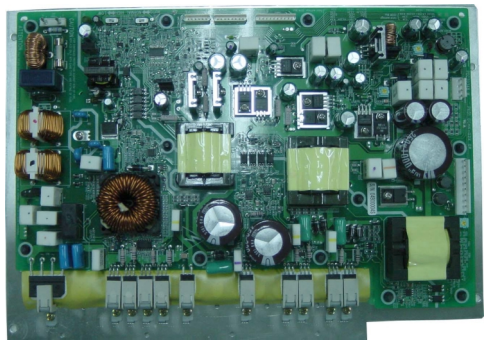


STRUCTURE OF PDP SET

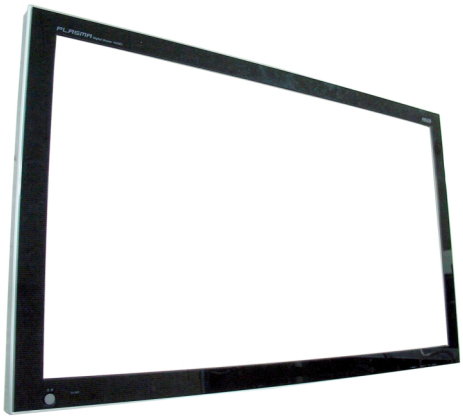
COMPONENTS	PICTURE	REMARK
1) PDP MODULE (with F/SUPPORT)		
1a) HIGH VOLTAGE PKG		
1b) Common Bypass PKG		
1c) Common Relay PKG(R)		

COMPONENTS	PICTURE	REMARK
1d) Data Relay PKG(L)		
1e) Data Relay PKG(R)		
1f) Scan Relay PKG-T		
1g) Scan Relay PKG-B		

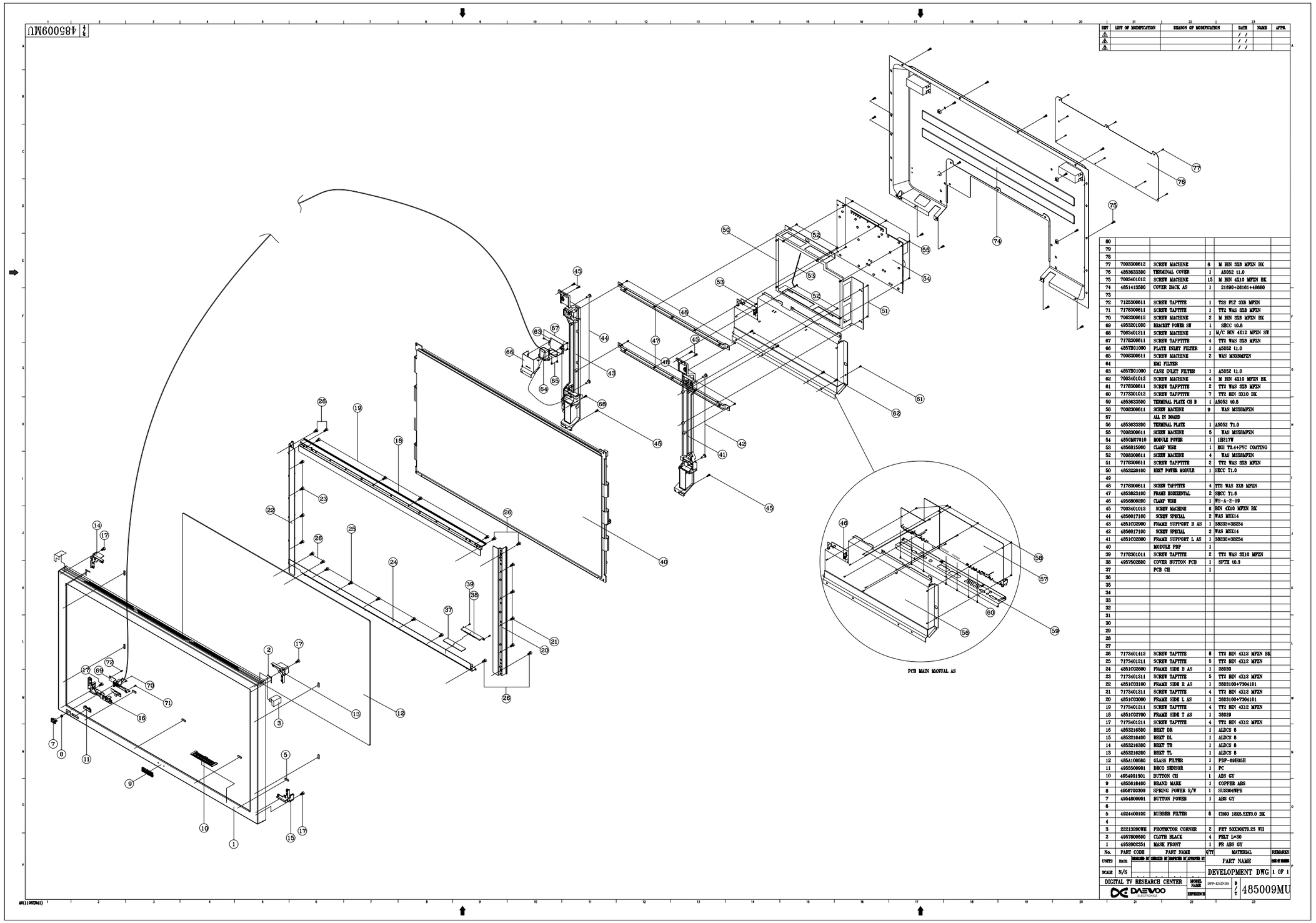
STRUCTURE OF PDP SET

COMPONENTS	PICTURE	REMARK
1h) Digital PKG		
2) MAIN BOARD		
3) SUB BOARD		
4) POWER BOARD		

STRUCTURE OF PDP SET

COMPONENTS	PICTURE	REMARK
5) FRONT MASK		
6) FILTER GLASS		
7) BACK COVER		

12. EXPLODED VIEW



REV	LIST OF MODIFICATION	REASON OF MODIFICATION	DATE	NAME	APPR.
1			/ /		
2			/ /		
3			/ /		

No.	PART CODE	PART NAME	Q'TY	MATERIAL	REMARKS
80					
79					
78					
77	7003300612	SCREW MACHINE	8	M BIN 3X8 MFZN BK	
76	4853633300	TERMINAL COVER	1	A5052 t1.0	
75	7003401012	SCREW MACHINE	15	M BIN 4X10 MFZN BK	
74	4851413500	COVER BACK AS	1	21690+28161+48660	
73					
72	7125300611	SCREW TAPTITE	1	TS2 FLT 3X8 MFZN	
71	7178300611	SCREW TAPTITE	1	TT2 WAS 3X8 MFZN	
70	7063300612	SCREW MACHINE	2	M BIN 3X8 MFZN BK	
69	4953201000	BRACKET POWER SW	1	SECC t0.8	
68	7063401211	SCREW MACHINE	1	M/C BIN 4X12 MFZN SW	
67	7178300611	SCREW TAPTITE	4	TT2 WAS 3X8 MFZN	
66	4857201000	PLATE INLET FILTER	1	A5052 t1.0	
65	7003300611	SCREW MACHINE	2	WAS M3X8MFZN	
64		EMI FILTER			
63	4857201000	CASE INLET FILTER	1	A5052 t1.0	
62	7003401012	SCREW MACHINE	4	M BIN 4X10 MFZN BK	
61	7178300611	SCREW TAPTITE	2	TT2 WAS 3X8 MFZN	
60	7173301012	SCREW TAPTITE	7	TT2 BIN 3X10 BK	
59	4853633500	TERMINAL PLATE CH B	1	A5052 t0.8	
58	7003300611	SCREW MACHINE	9	WAS M3X8MFZN	
57		ALL IN BOARD			
56	4853633200	TERMINAL PLATE	1	A5052 T1.0	
55	7003300611	SCREW MACHINE	5	WAS M3X8MFZN	
54	4850M07910	MODULE POWER	1	IH217W	
53	4856815900	CLAMP WIRE	1	EGI T0.4+PVC COATING	
52	7003300611	SCREW MACHINE	4	WAS M3X8MFZN	
51	7178300611	SCREW TAPTITE	2	TT2 WAS 3X8 MFZN	
50	4853220100	RSET POWER MODULE	1	SECC T1.0	
49					
48	7178300611	SCREW TAPTITE	4	TT2 WAS 3X8 MFZN	
47	4853823100	FRAME HORIZONTAL	2	SECC T1.6	
46	4956800200	CLAMP WIRE	1	WS-1-2-10	
45	7003401012	SCREW MACHINE	6	BIN 4X10 MFZN BK	
44	4856017100	SCREW SPECIAL	2	WAS M3X14	
43	4851C02900	FRAME SUPPORT R AS	1	38233+38234	
42	4856017100	SCREW SPECIAL	2	WAS M3X14	
41	4851C02800	FRAME SUPPORT L AS	1	38232+38234	
40		MODULE PDP	1		
39	7178301011	SCREW TAPTITE	2	TT2 WAS 3X10 MFZN	
38	4857502550	COVER BUTTON PCB	1	SPTH t0.3	
37		PCB CH	1		
36					
35					
34					
33					
32					
31					
30					
29					
28					
27					
26	7173401412	SCREW TAPTITE	8	TT2 BIN 4X12 MFZN BK	
25	7173401211	SCREW TAPTITE	5	TT2 BIN 4X12 MFZN	
24	4851C02600	FRAME SIDE B AS	1	38030	
23	7173401211	SCREW TAPTITE	5	TT2 BIN 4X12 MFZN	
22	4851C03100	FRAME SIDE R AS	1	3803100+7304101	
21	7173401211	SCREW TAPTITE	4	TT2 BIN 4X12 MFZN	
20	4851C03000	FRAME SIDE L AS	1	3803100+7304101	
19	7173401211	SCREW TAPTITE	4	TT2 BIN 4X12 MFZN	
18	4851C02700	FRAME SIDE T AS	1	38029	
17	7173401211	SCREW TAPTITE	4	TT2 BIN 4X12 MFZN	
16	4853216500	RSET DR	1	ALDCS 8	
15	4853216400	RSET DL	1	ALDCS 8	
14	4853216300	RSET TR	1	ALDCS 8	
13	4853216200	RSET TL	1	ALDCS 8	
12	4854100680	GLASS FILTER	1	PDP-60H80H	
11	4955500901	DECO SENSOR	1	PC	
10	4954901501	BUTTON CH	1	ABS GY	
9	4855618400	BRAND MARK	1	COPPER ABS	
8	4956700300	SPRING POWER S/W	1	SUS304WPB	
7	4954800901	BUTTON POWER	1	ABS GY	
6					
5	4924400100	RUBBER FILTER	8	CR60 18X5.5XT3.0 BK	
4					
3	2221320WH	PROTECTOR CORNER	2	PET 50X30XT0.25 WH	
2	4957800500	CLOTH BLACK	4	FELT L=30	
1	4952002351	MASK FRONT	1	PS ABS GY	

UNITS	mm	DESIGNED BY	CHECKED BY	DRAWN BY	APPROVED BY	PART NAME	DWG OF NUMBER
SCALE	N/S					DEVELOPMENT DWG	1 OF 1

DIGITAL TV RESEARCH CENTER — DAEWOO ELECTRONICS — MODEL NAME: DPP-4241NHS — REFERENCE — D/T 485009MU

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